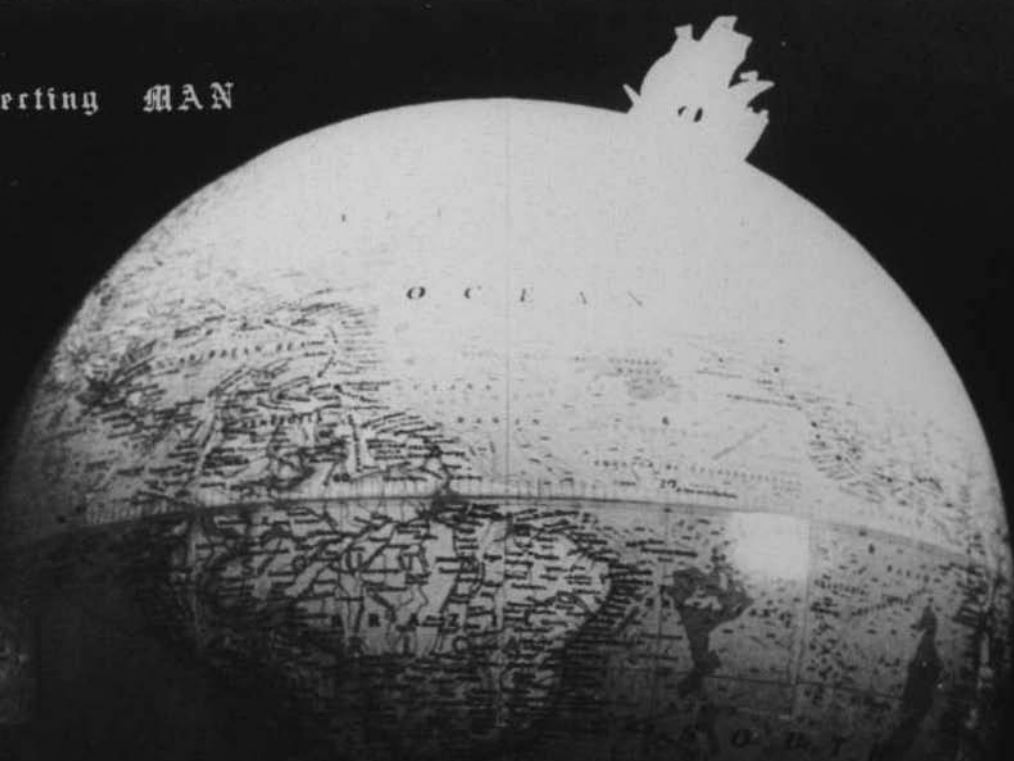


FLORIDA HEALTH NOTES

Protecting MAN



Since 1889

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HEALTH and

VOLUME 64 — NO. 1

JANUARY 1972

the ENVIRONMENT



HEALTH and the ENVIRONMENT

Man and his environment were not always as they are today. When Adam was placed in the Garden of Eden, man and his environment were untarnished. And areas of the globe remained thus for centuries. Columbus in the narratives of his travels wrote about the "noble savages" of Central America, describing their magnificent physical condition. Captain Cook and other navigators who sailed the Pacific Ocean marveled at the excellent health of the island natives. Explorers were similarly impressed with early contacts with other aborigines — Indians, Africans and Eskimos. The legends of the people in these undeveloped regions — unspoiled in their stainless environment — were perpetuated by the globe-trotters.

Civilization brought enlightenment and technology to these people and contact with other groups. But in turn, it brought problems of man's greed. In time, people gathered in cities and these brought problems of water supply, sewage and solid waste disposal, communicable diseases and toxic contaminants to the environment. Also, came health problems of slums, poverty, filth, ignorance, drugs, delinquency and crime. This has had a telling effect on the well-being of Man who started out in the Garden of Eden.

Florida, at the time of Ponce de Leon, was such a garden. And it continued as the dwelling place of wild birds, alligators and salt

IT'S A GREAT, BIG WORLD — (Cover photo) Pollution knows no boundaries and spreads beyond the Seven Seas. Florida — a part of this world — has been protected by the Division of Health since 1889. The health agency has many areas in which it protects the environment for the sake of man (opposite page). These include the inspecting of public buildings, such as hospitals and office buildings, the measuring of rainwater for atomic fallout, dredging of mosquitoes' breeding places, and regulating the pest control industry.

marsh mosquitoes — a land of piney woods and Everglades — until man brought yellow fever, malaria and other diseases to contaminate this subtropical paradise. A few decades ago, men decided that Florida was a delightful place to live and thus began the accumulative contamination of the environment. This issue of *Florida Health Notes* will tell you about the problems facing the Florida environment, why the old State Board of Health (now Division of Health of the Department of Health and Rehabilitative Services) was started, and how over the years, its attention to matters of the environment has made Florida a healthier place to live. A spectacular health step, for example, was the elimination of water-borne scourges — such as typhoid — through the treatment of water and sewage.

Problems of the Environment

You can't get away from the fact that the manipulation of the environment is related to control of human disease. The insistence that sewage be adequately treated is because of the great likelihood that it carries agents which cause disease in humans. Solid waste must be properly disposed of so that it will not be a threat to man's health through mosquito and rat harborage.

An industrial complex, no matter where it is constructed, must have built-in controls of its industrial and human wastes. A condominium, constructed on a spit of land or island, may benefit only a few persons, but it may not benefit man in general if there is contamination of the environment by garbage and untreated sewage. It must not be allowed to disrupt the ecology. A subdivision, where houses are built in close proximity to each other, needs to have control of solid waste and sewage disposal, plus a good water supply.

When the Spaniards landed on the shores of Florida in 1565, the land had only Indians, mosquitoes and alligators. For three and a half

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BRINGING CIVILIZATION — When the Spaniards landed on Florida's shores, they found mosquitoes, Indians and alligators. They also brought civilization and the beginning of today's health problems.

centuries, the area was quiet with few inhabitants, some Indians and a great many mosquitoes. Count de Castelnau, in his book on his travels in Middle Florida, said the mild winters made Florida a favorite resort for people who suffered from pulmonary tuberculosis, but he could not say anything favorable about the region because of the fevers that afflicted the inhabitants at certain times of the year.

Following World War I, and particularly after World War II, the state began to grow without precedent. It developed an industrial, tourist, agricultural and cattle-producing economy. The environmental problems of recent years, and those to come in the near future, make the problems of health and the environment most urgent. There are a number of factors, already highly significant, that will become more serious during the 1970's:

* The accelerating population is stimulating the growth of gigantic urban complexes — the West Palm Beach-to-Miami area, the Orlando-Disney World area, and the Florida West Coast. Traditional problems within these complexes are substantially aggravated. Some of the more urgent problems that will arise are related to mental health and to protection against communicable diseases. These urban

complexes will experience problems of providing adequate water supply and sewer services and solid waste management; the increased impact of toxic contaminants on the environment will be felt.

* Economic growth and rapid advances in technology lead to such fast development of industrial processes and products that evaluation of their combined effects on health and the deterioration of the environment cannot keep pace. The type and extent of industrial development will be highly important to the air, water and land environment. Other stresses include mental and physical tensions, noise, congestion, accidents and poisonings.

* The expanding use of ionizing radiation brings to the air, water and land resources a pollutant with new terms and dimensions. The effects of radiation are irreversible; there is little or no accommodation in the human organism. Cells escaping damage in one radiation assault are left with no immunity or tolerance against future exposures. Radiation is not detectable by the physical senses. It is unfortunate that the public associates it with great destructive forces, such as the atom bomb. The use of atomic energy is now important in the generating of electricity in Florida.

* New populations — with growing needs, loftier aspirations, and higher standards and requirements — already overtax resources for consumer goods and services. As a conglomerate effect of urban growth and expanded industrial production, problems of air, water



and land pollution become more urgent — as does the problem of noise pollution.

* As our pace of living accelerates, sources of tension, of monotony, and of accidents in travel, in business and in the home, will increase too. At the same time, the steady rise in the production of the individual will result in more leisure time. This will have significant impact on the physical and mental health and general well-being of the people. For Florida, these factors will influence tourism and hence increase seasonal congestion and population densities of resort cities.

The health threat created by these forces will become increasingly more acute. Health concern about environmental pollution, formerly centering around biological contaminants, is now broadened to include pollutants which have their origin in chemical substances.

Which of the pollutants are toxic to humans? At what levels? How toxic? How important are the additives in foods, their combinations, and the total effect of these substances?

Together, these and related influences constitute a description of the manner in which man's changing environment is affecting his physical and mental well-being. Their full significance is more clearly



PROBLEM AREAS — Expanding populations in urban areas create problems related to mental health, communicable disease control, and environmental pollution. (Photo courtesy of Florida News-Bureau-Department of Commerce.)

reflected in the full implication of a tense, highly productive, competitive, socially unstable and technologically-oriented economy now emerging in Florida.

A Broad Foundation of Service

The Division of Health has been involved in altering or manipulating the environment for the good of mankind since its beginning as the State Board of Health in 1889.

The health agency was the first, and is now the only, state agency involved in protecting the environment for the benefit of man. As time has passed, other state agencies have become involved in the manipulation of the environment for other reasons — wild life, agriculture, recreational purposes; but the Division of Health is the only one that has ever been involved in the control of the environment as it applies to human health. Many private and voluntary organizations are interested in this work and have made many important contributions to protecting the ecology.

From the beginning, the Division of Health was concerned and promoted a better environment. In the early days of the old State Board of Health, it was interested in primitive drainage of towns and homes that could prove to be a source of danger to health. It urged Floridians to give attention to disposal of sewage and household wastes. It took an interest in kitchen slop-puddles and cesspools. Citizens were urged to keep barnyards, hen coops and pig styes scrupulously clean so as not to pollute the air, or be a source of defilement to neighboring streams.

In 1916, the Bureau of Engineering was formed in the old State Board of Health to take over the work of promoting better sewage treatment. A great amount of work was carried on in sanitary

A LONG TIME — For years the Division of Health, formerly the State Board of Health, has been in the work of altering the environment for the sake of man's health. This 1947 *Florida Health Notes* shows that the health agency has been active in pollution control for a long time.



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Stream Pollution

investigation of municipal water supplies and sewerage systems, of school and community sewage disposal plants. It advised individual citizens on problems concerning proper disposal of sewage, of obtaining potable water supplies, and other kindred problems.

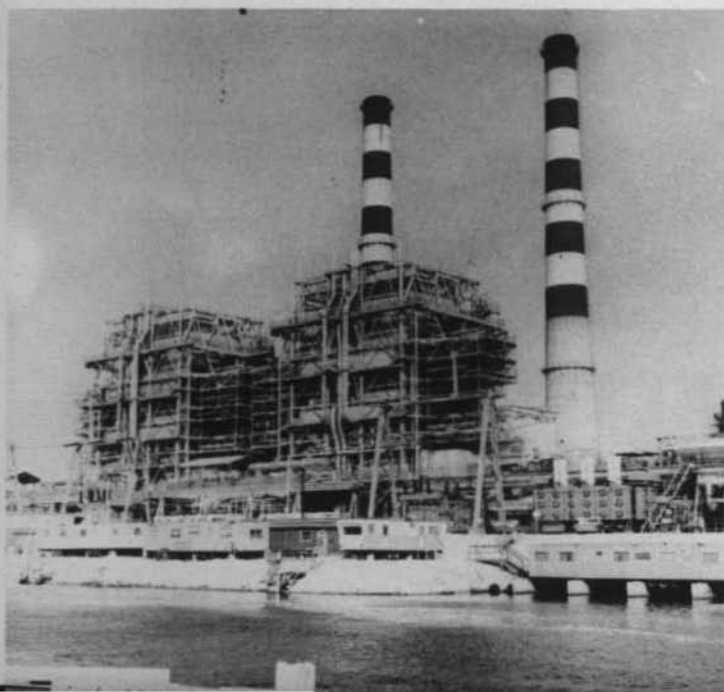
Today, the Division of Health has concentrated its modest resources on the control of communicable diseases, on improving sanitary services, and protecting the environment where human health might be endangered. The health statistics of the state testify to the fact that this job has been well done.

Florida is high among the states:

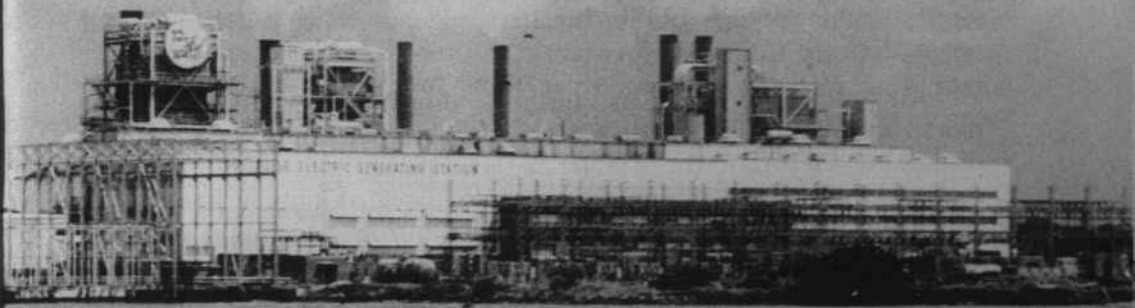
- * in suppressing childhood diseases;
- * in controlling germ-spawned diseases of adults; and
- * in continuously improving environmental-sanitation services.

The purity of the public water supplies is second to none. Progress with the state programs of sewers and sewage treatment facilities rank high among the states.

The real challenge that the Division of Health faces is to devise practical ways for dealing with its respective problems so that the end product — environmental quality — meets general public approval. To do this, it is developing, maintaining and supporting programs which can keep pace with the changing times. While the



A REAL CHALLENGE —
An expanding economy has produced water and air pollution problems in Florida. Power generating stations (opposite page) that use oil with high sulphur content have created problems for Floridians.



state's environment-control machinery must deal with today's problems, it must be in step with the changing problems and changing public attitudes, and constantly looking to its future.

The Human Ecology

Man is affected by two types of environment:

* the micro-environment, that which immediately surrounds him. This includes the bacteria and viruses that make him sick, his personal hygiene, and whether or not he cleans his hands.

* the macro-environment, the world around him. This includes the disposal of his sewage, the purity of his drinking water, the cleanliness of his atmosphere.

Environment has come, in our day, to mean many things. It suggests malnutrition and infection in most poor, undeveloped countries; chemical pollution and mechanization of life in the more prosperous countries. The ecological crisis is everywhere so menacing and takes such varied forms that the term "human ecology" has come to be used for certain situations that might lead to biological or mental disasters. The Division of Health believes that all physical, biological and social forces acting upon man impart a direction to his development and thus influence his nature, attitudes and health.

The Division of Health has never attempted to delineate between environmental health, community health and human health — all are no more separable than the ocean from its shoreline. The Lake Apopka episode, the fish and viruses debates, the most recent amoebic encephalitis attentions involving Florida's beautiful lakes are

today's battlegrounds in the public health frontier that have wed medical-epidemiologic-public health judgements to environmental protection.

Air pollution problems, notably those at the Doctor's Inlet rendering factory, the Indian River asphalt plant, the Polk County phosphate factories, the Tampa battery plant, and the North Dade sewage plant stirred public outcry solely because human health was at stake. Critical decisions about land pollution, too, hinge on their effects on personal health. The Gainesville compost plant, the Seminole country sewage sludge utilization project, the threat of botulism poisoning in contaminated soup, and even automobile graveyards are problems facing the people of Florida because of their effect on the health of the people.

The ever-changing responsibility for evaluating environmental conditions and their effects on the health of Floridians is laid before the medical expertise of public health. A patient wouldn't turn to a mechanic to evaluate his chest pains and for therapy. Engineers should not be expected to make judgements on medical problems that are related to human health.

The Division of Health is the only state agency charged with disease prevention. The best and greatest disease control is based on a knowledge of patterns of disease occurrence; from these patterns, a reliable prediction of occurrence can be ascertained; and from predictions, preventive action can be taken.

Patterns of disease occurrences are derived from surveillance activities of the Division of Health and county health departments — which watch all factors involved in the frequency and geographic distribution of disease. Without this surveillance data, preventive action is not effective. It is known that some preventable children's diseases occur in cycles covering several years. Through immunizations, the peaks in these cycles can be lessened.

The Division of Health watches closely those factors that determine the frequencies of disease in man and moves to alter those factors in favor of man. For example, epidemiologists at the Division of Health know that contaminated drinking water is important in determining the frequency of typhoid, salmonellosis, shigellosis, amebiasis, ascariasis, cholera, hepatitis, poliomyelitis and scores of other enteric infections of man. Thus, the Division of Health has insisted over the years on properly-treated water supplies.

The Division of Health knows that methods of sewage disposal are prominent factors in determining the frequency of those intestinal diseases in man and, therefore, governs methods of sewage disposal. Unsanitary handling and improperly-pasteurized milk is a major factor in determining the frequency of brucellosis, scrofula, streptococcal sore throat and other infections in man, and therefore, the Division of Health watches closely the milk industry. X-ray irradiation, nuclear radiation, and even non-ionizing radiation bears predictable relationships to frequency of leukemia, cancer, congenital defects, and a dozen metabolic disorders of man, and therefore, the Division of Health exercises authority over the use of radioactive materials.

The Division of Health knows that rabies, leptospirosis, plague, anthrax, trichinosis, ringworm, creeping eruption, and scores of other diseases of animals and wild life directly affect man, and therefore, these diseases are closely watched by the health agency.

Sulfur-dioxide that emerges from some industrial stacks combines with water in the atmosphere to make sulfuric acid. This burns and dries up the mucous membranes of the respiratory system, setting up conditions that lead to the growth of such diseases as pneumonia and bronchitis. This is a known medical fact of air pollution.

Sanitation and Health

Germs are dangerous to man and the environment. This is the reason that the Division of Health insists that sewage be treated. This is the reason that it has promoted the development of sewerage systems in urban areas and in those subdevelopments where people live close together. As mentioned earlier, the old State Board of Health was interested in the safe discharge of domestic wastes. As early as 1916 it was promoting the installation of correctly-designed sewage treatment plants. It was also concerned with the fact that these plants should be operated properly.

Since that time, the day-to-day activities, and therefore, daily reports are concerned with recording the great diversity of factors known to determine the frequency and distribution of infectious processes in the community that involve the environment.



PROTECTING PEOPLE —

The installing of sewer lines (left) and the inspecting of storage areas for perishable foods in stores (opposite page) are just two areas in which the Division of Health and county health departments protect Florida's citizens and visitors.

The programs include septic tank permits, sewage plant approvals, water samples, shellfish control, restaurant inspection, milk samples, permits to food processing plants, camp inspection, operation of water plants, methods of garbage disposal, plumbing inspections, food handlers registration, mosquito collection and identification, daily rainfall, inspection of x-ray machines, scrutiny of nuclear reactors and registration of radionuclides.

The literally scores of other categoric activities performed by county health departments are "surveillance data" important to assessing patterns of factors that influence disease occurrence. This is the "community diagnosis" that is important to the control of preventable diseases.

The interpretation of the distribution of these diseases and the information important to the identification of their sources are critical. This is the backbone of public health practice. The physician is trained in the science and art of interpreting a variety of information from a great number of sources for diagnosis of any illness in an individual. The public health practitioner is likewise able to interpret the problems of a community that affect groups of people.

With the reorganization of the state government in 1969, the Division of Health lost approximately one half of its sanitary engineering staff. The workload, however, has continued to increase

about 30 per cent a year. The number of sewerage systems is still growing and plans must be approved. Also, monthly reports from sewage treatment and water supply plants must be analyzed; water samples for bacteriological analysis must be sent to the public health laboratories.

The Division of Health has opposed the use of septic tanks in urban areas, feeling that they are best used only in rural areas where people are not crowded together. The state health agency is responsible for developing, interpreting, and distributing rules and regulations governing construction, installation, and surveillance of these individual waste disposal systems. This program involves a permit system which is delegated to and implemented by local health authorities.

The campaign for a healthy environment carries the Division of Health consultants and county health department sanitarians into a wide range of places:

* food preparation and serving establishments for inspection of quality of food, hazards of adulteration by foreign chemicals, or



contamination by disease-producing germs. For these reasons, the health agencies insist on refrigeration, clean atmosphere and water, and clean people who handle the food.

* public buildings, including hospitals, nursing homes and schools, where the Division of Health is concerned with the construction of the buildings, safety factors, adequate lighting, the air and atmosphere — all of the components of the environment.

* dairies and milk processing plants where evaluations of compliance with sanitary standards are made.

The Division of Health has the responsibility for promulgating rules and regulations relative to the shellfish industry. For the protection of consumers of oysters, crabmeat and other shellfish, the health agency monitors and surveys the shellfish growing waters and shucking, processing, packing and shipping plants. This is part of an interstate cooperative program which leads to the certifying of shellfish packers and growers for interstate shipment, maintaining state-federal relations, including federal assessment of the program's efficiency. The Division of Health has a cooperative agreement with the Florida Department of Natural Resources which patrols shellfish growing waters that have been closed by the health agency because of pollution by industrial or domestic wastes.

The Division of Health also has worked closely with the Department of Natural Resources and the U.S. Department of Interior's Office of Saline Water on the conversion of salt water to fresh. Over the years, the state health agency has worked with the Public Service Commission in respect to water and sewer utility companies. The Commission sets the rates for the companies, but relies on the Division of Health to advise it as to the adequacy or inadequacy of the facilities.

Controlling Pests in the Environment

Medical and sanitary entomology is an integral part of the state's public health program. The control and prevention of mosquitoes and other arthropods which can transmit disease or otherwise affect the health and comfort of man is closely tied to public health. The health importance of insects is the primary reason for arthropod prevention and control.



DISEASE CARRIER — The control of the salt marsh mosquito has opened many areas of the state for real estate development and tourism. Continuous control is needed to keep the state free of disease.

The two programs supervised by the Division of Health's Bureau of Entomology are:

- * mosquito and other arthropod control; and
- * regulation of the commercial pest control industry.

These programs affect the health, comfort, safety, economics and the very lives of the largest percentage of Florida residents and tourist population. The work has been the results of a long-standing, intimate association of the Division of Health with other health-related agencies.

The two programs require the expertise and direction of professional medical entomologists. Since human diseases are involved, a close relationship with medical professionals and with specialists and technicians in laboratory services is required to form the highly successful closed triangle now operating within the Division of Health. Over the years this cooperation has been one of the hallmarks in public health of which the state can be justly proud.

The Division of Health's Bureau of Entomology, with its supporting Entomological Research Center at Vero Beach, and West Florida Arthropod Control Laboratory at Panama City, is considered by many entomologists to be the nation's outstanding public health organization of its type, and it has become internationally recognized for its excellence.

Financial support by state and local governments for mosquito and arthropod control has been the principal factors behind the state's great development and growth in coastal areas. Tourists, once driven from Florida's beaches and recreational areas by salt marsh mosquitoes, dogflies and other intolerable pests, are now able to enjoy all Florida's attractions. The Division of Health for many years has maintained a network of mosquito-trapping stations throughout the state. This is to determine the kinds and numbers of pests in the environment. Since the decline of female salt marsh mosquitoes caught in light traps between 1950 and 1958, the state has realized a tremendous growth of tourist dollars from \$1 billion in 1958 to \$4.5 billion in 1967.

The commercial pest control industry is concerned with control of insect pests found in places where human beings live and spend most of their time. The real basis of this industry lies in the matter of community health and must be supported and regulated by public health and entomological professions. The experience and expertise of these professionals are extremely essential to the assurance of proper, approved use of pesticides in and around homes and other structures where human health is all important.

The greatest success story of health-oriented programs, documented in the archives of Florida, has been the control of vector-borne diseases — such as malaria, yellow fever, typhus, dengue, and the protection of man from biting mosquitoes. The long-established method of control of arthropod-borne diseases is:

RODENT CONTROL —

Premise sanitation, distribution of bait, and spraying with cyanide gas have helped eliminate typhus from the state. If surveillance and control of rodents break down, Florida could experience new outbreaks of the disease.



* the accurate recognition through diagnosis of disease in humans;

* the clinical laboratory studies on blood specimens and other materials from humans, animals, birds, and the insects themselves; and

* armed with these facts, the Division of Health is able to take proper control, suppressive, or preventive measures.

This system requires the closely coordinated working relationships of the public health physician (epidemiologist), laboratory specialist, medical entomologist, biologist, mosquito control engineer, and other specialists which the Division of Health provides through its professional competency to a degree unexcelled in the entire world.

A Division of Health entomologist predicted early in 1962 that an epidemic of encephalitis would occur in Florida because of the cut in state funds for mosquito control. He stated that the state would lose millions of dollars. As predicted, an epidemic of St. Louis encephalitis occurred in the Tampa Bay area later that same year. It is estimated that Florida lost over \$40 million, not to mention the lingering effects of adverse national publicity. Research into the cause and spread of the encephalitides since then has made possible the more careful surveillance of these diseases; and increased control measures have helped reduce the possibilities of new outbreaks.

Much of the control of mosquitoes depends upon premise sanitation. In the 1930's, dengue fever control called for the elimination of domestic mosquito breeding in old tires, in cans and trash. Today, premise sanitation is somewhat a lost art and this could lead to the proliferation of rodents — with attended risks for outbreaks of such disease as typhus.

Radiological Factors in the Environment

The atomic age has made a definite impact on Florida in the past few years. There are presently four atomic energy generating plants under construction and announcements have been made that at least three others are in the planning stage. Due to the cost of fossil fuels and the pollution resulting from their use, it is expected that the number of atomic energy plants will increase.

In this respect, the Division of Health has been active in performing pre-operational environmental surveillance at three proposed building sites with financial assistance from the involved electrical power companies. This surveillance is to determine the existing background levels of radioactivity so that any release of radiation when these plants are in operation can be properly evaluated.

The program of cooperation in financial assistance from the power companies has been outstanding in preventing a duplication of effort and an over-lapping of activities with financial savings both to the state and the power companies. There is no conflict among the state agencies in this program; the Division of Health's Radiological Health Laboratory in Orlando, which does the testing of materials for radioactivity levels is the only state operation of its kind.

Since Florida became an Agreement State with the U.S. Atomic Energy Commission in 1964 — under which the state licenses users of radioactive materials, there has been a ten-fold increase in this field of activity. The number of persons licensed by the Division of Health to use these nuclear materials has more than tripled; the number of radionuclides in routine use is approximately seven times that in 1964. In spite of this tremendous increase in activities, the Division of Health's staff in this program has diminished rather than increased.

Nationally-known authorities have stressed the hazards of x-ray irradiation to the population in relation to increasing rates of leukemia, cancer and other related diseases — as well as increases in congenital defects. For as much as 15 years, the practice of x-rays to patients' pelvic areas as a routine measure has been condemned — except in cases where special indications exist. This is due to the possibilities of an increase in congenital defects in newborn babies. It has been estimated that the x-ray doses to the population could be decreased as much as 70 per cent through the proper filtration and collimation of the x-ray beams. This would prevent unnecessary exposure to areas of the body which are outside the field of interest to the examining physicians.

The present staff of the Division of Health physicists is inadequate to inspect the more than 11,000 x-ray machines in the state. A proposed fee-for-service bill for the registering the users of radionuclides and owners of x-ray machines would do much to support this program financially.

RADIATION PROTECTION — A physicist delivers samples of vegetation from areas surrounding a proposed nuclear power plant to the Division of Health's radiological laboratory. The samples will be tested for existing radiation levels. More samples will be tested after the plant goes into operation to determine if radiation is being released into the environment.



The transportation of radioactive materials is another problem facing the Division of Health. This demands safe packaging and routing of the thousands of shipments of radioactive materials that are made in Florida each year. In order to help meet the chances of an accidental spilling of radioactive materials, the Division of Health has an emergency radiological response team that would rush to the scene of the accident and prevent exposure to the environment, and contain the materials to a minimal area.

Laboratory Support of Environmental Programs

Laboratory support is vital to determining the nature and levels of pollutants in the environment. Through regional laboratories located in Jacksonville, Miami, Tampa, West Palm Beach, Orlando, Tallahassee, and Pensacola, laboratory services are made available to physicians, hospitals and independent laboratories, medical examiners' offices, law enforcement and other federal, state and local agencies as required by law or special agreement.

The old State Board of Health discovered early in its existence that its fight against infectious diseases would require laboratory services. Dr. Joseph Y. Porter, the first state health officer, emphasized in his writing the need for laboratories. The State Legislature authorized the first laboratory in 1902 and the first specimens were

received the following year. Some of the first specimens submitted involved environmental protection — the testing of drinking water for typhoid and carriers of typhoid.

Today, the laboratories not only do testing of specimens from humans, but they maintain the capabilities to perform microbiological, chemical, radiological and physical analysis of air, water, food, animal and plant tissue, soil, drugs and other materials as required for Division of Health surveillance and control of diseases and conditions affecting human health.

The Division of Health laboratories differ from others in state agencies in that they confine their research and examinations to finding factors that influence the health of man.

The public health laboratories perform a long list of services:

- * test water from drinking supplies, swimming pools, natural bathing places, and recreational areas for bacteria pollution. (The service is also carried on in 10 county health departments certified for the examinations.)

- * test milk samples for bacteria, antibiotics and other chemical adulterants.

- * test foods for possible causes of food poisoning (including staphylococcus, salmonella, shigella, botulism, and toxic chemicals).

- * test milk, drinking water, rainfall and groundwater for radioactive nuclides.

WATER SAMPLES — The Division of Health's public health laboratories have tested drinking water samples for contamination ever since they started operations in 1903.



* test vegetation from areas surrounding nuclear energy power stations for background radiation activities that already exist.

* monitor missile firings from Cape Kennedy for possible abortive missions and radioactive fallout from nuclear devices intended for moon exploration.

* test radar ovens, x-ray devices, electronic equipment, color television sets for possible radiation leakage.

* test industrial plants for noise pollution, inadequate lighting, poisonous gases, poor ventilation and humidity.

* maintain air-borne pollen counting stations in several resort cities to determine the amount of pollen that will affect people with respiratory diseases.

* test paints from houses built some 25-30 years ago for possible high lead content.

* test shellfish growing waters for bacteria, toxic poisons — both natural and man — produced.

* examine animal tissues for viruses, bacteria, parasites — diseases of animals that are transmissible to man; monitor mosquitoes for encephalitis.

* carry out chemical analyses on drugs and narcotics for law enforcement agencies.

There are many more specific types of examinations carried out by the Division of Health laboratories. Many of the three million tests made annually on submitted specimens are directly related to improving the ecology — the environment. This work is important to the future growth of Florida's environmental control program.

The Division of Health's Team

Ninety per cent of the concern expressed on noise, air and water pollution involves the health of man. But a part of the concern is over paint on buildings, wild life, orange trees, cows' bones, fish in the canals because of their relationship to man. In the struggle to manage the environment, man is primary — all else is secondary. but the Division of Health does not subscribe to the theory that man can wear gas masks while the animals suffer. They cannot protect themselves.

But the game of musical chairs played with the environment is inconsistent with the concern professed by people who care about the ecology. Fragmentation does not solve the problems of pollution control. Legislative mandate important to the Division of Health automatically involves the epidemiologist, sanitarian, entomologist, laboratory technician, lawyer, sanitary engineer, sociologist and many other disciplines in one team which can manage the environment for the good of Man. Individually their contributions are significant; collectively their input cannot be measured, adding up to an indefinable quality of protection for the environment.

As an example, when a private laboratory reported finding disease-producing viruses in fish, the Division of Health used the modest resources of its established Epidemiological Research Center in Tampa to spot-check reports of viral and bacterial contaminants in fish and shellfish to determine if levels of significance to health did indeed exist.

The Division of Health also seeks ways to use its established facilities in toxicology, epidemiology, and engineering to provide an environmental-intelligence capacity to monitor and to check out the severity of emerging and changing environmental factors.

But if Florida wants to give environmental protection, it must utilize all available forces of quality — wherever they are located. Not all of the environmental specialists are in the Division of Health — nor in other state-level agencies. Some 600 regional engineers, sanitarians and chemists who are environment-oriented, are located in the 67 county health departments. Some of the large counties have staffings adequate to serve most environmental needs, including air, water and domestic waste disposal — both liquid and solid. In several counties, air and water pollution control activities have been integrated with other environmental programs. Some county health units have taken action designed to assure upgrading of environmental concern programs.

Partner with the Division of Health in the work of health and the environment is the \$26 million county health department system which exists because of voluntary agreements between the Division of Health and each of the 66 Board of County Commissioners, and the City of Jacksonville. These Boards are not required by law to contribute financial support to the local health units, but they do so voluntarily.



PART OF THE TEAM — Sewerage systems are a part of the Division of Health's program to protect man and his environment. Sanitary engineers and sanitarians are components of the health agency's team that helps protect people from an unhealthy environment.

There are also contracts or agreements in 29 counties by which local Boards of Public Instruction provide funds to their respective county health departments for health services. Twenty-one municipalities make voluntary contributions to local health departments to support health — including environmental health services and enforcement of local ordinances within their boundaries. But even where money is not contributed, the local health departments serve as the health agency for the local school systems and municipalities.

In the environmental health field, there are a variety of patterns of participation and responsibilities. Some county health departments have formal responsibilities for air and water pollution control, and some don't, but work with the Department of Pollution Control, or through the Division of Health. Some county health departments are not involved because separate local agencies have been established for these programs.

The Division of Health, Department of Pollution Control, and other state agencies need the assistance of county health department personnel to carry out their state-wide programs. However, from an administrative standpoint, county health departments and their staffs should be responsible to only one state agency — the Division of Health. It would be expensive and impractical to provide separate

staffs in counties for each state agency. Where there is a need for cooperation, agreements, memorandums of understanding, or outright purchase of county health departments' services could be provided.

An Interwoven Existence

Man and his environment are forever entwined. The procedures to improve, protect, preserve the environment must always account for the physical and economical and social well-being of man.

Medical and sanitary entomology is an integral part of the state's public health program and cannot be separated from it without weakening the health protective mechanisms of the health agency and the total state effort to protect the people's health.

Due to the hazards of radiation, the radiological health program of the Division of Health is essential to the protection of the people.

Over two million Americans are stricken with food-associated illnesses each year, most of which is caused by microbiological contamination of food. Each of us consumes about three pounds of chemicals annually in the form of food additives used to impart flavor, color or retard spoilage.

The focus of the environmental activities of the Division of Health in the 1970's must continue to be on the people — on their health and well-being. Health surveillance and health protection is a highly specialized and complex undertaking which in Florida has taken decades to develop and perfect.

You, the reader, may not understand the complex methods use, or the difficulties involved in protecting your environment. But you should know that the Division of Health has a deep, basic and universal concern for your health and your environment that is unquestionable and has no rival.

The health of the people is really the foundation upon which all their happiness and all their powers as a state depends.

Disraeli (1877)

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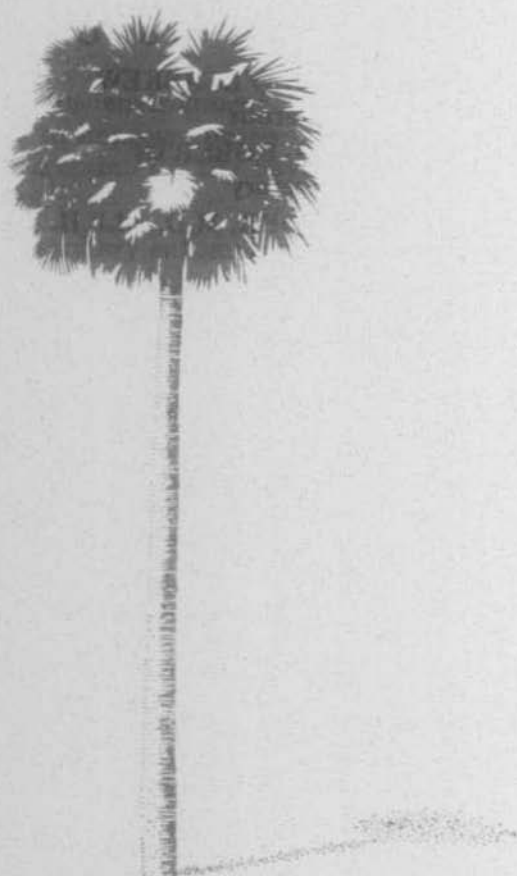
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FLORIDA HEALTH NOTES



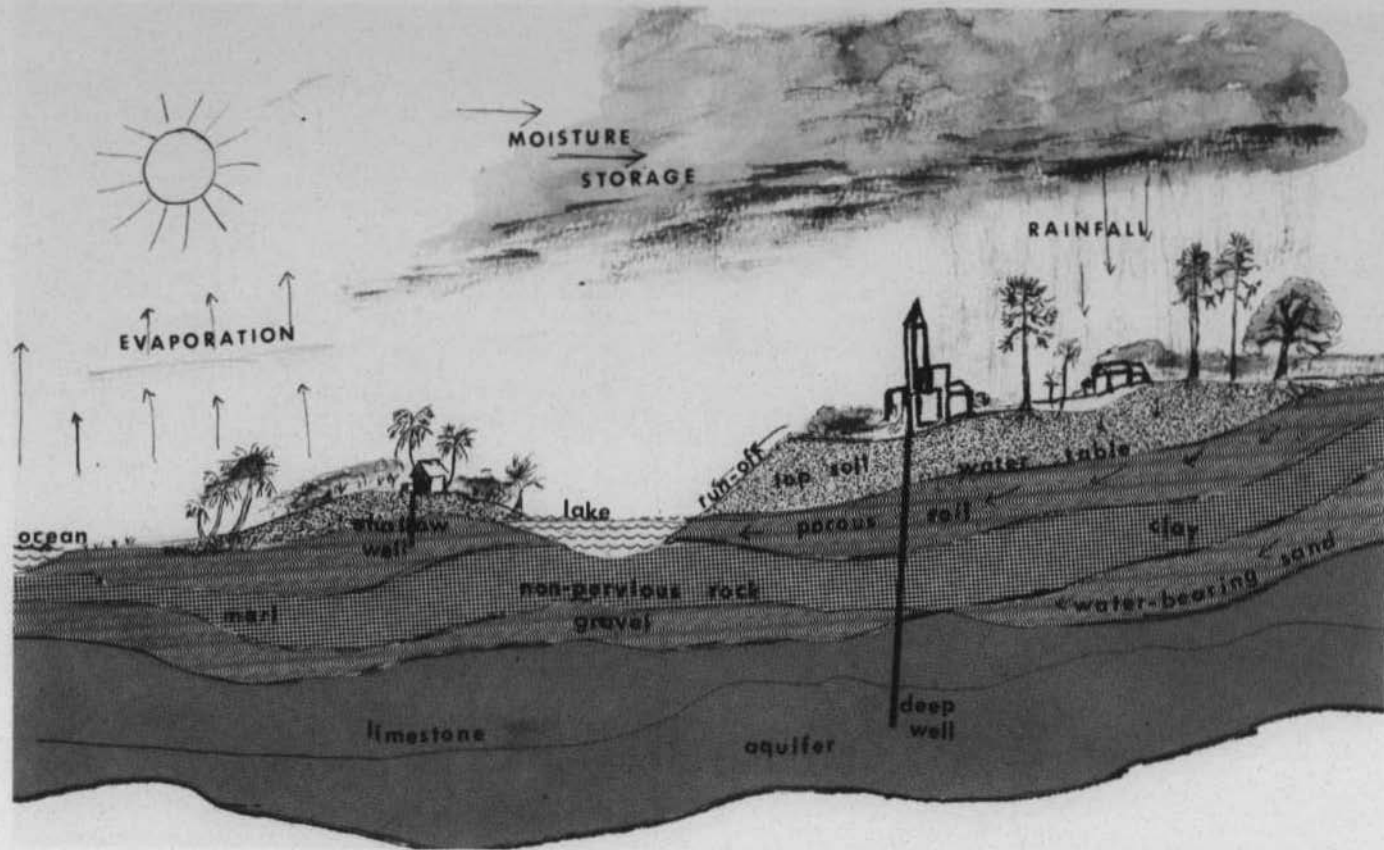
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FEBRUARY 1972

A Biomedical Science Publication

*Water Supplies
and Septic Tanks*

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THE WATER CYCLE — Water evaporates from the ground, plants, ocean and lake into the clouds where it is stored. It then falls as rain, soaks into the ground, penetrates the non-pervious rock, and goes into water-bearing layers of

sand, gravel and limestone. Shallow wells tap the ground water; deep wells draw water from the deeper limestone aquifers.

Water Supplies and Septic Tanks

Man can be a slave to many things. Some by choice; others, such as air, water and food are essential for his very existence. Deny him food and he may live for several weeks. Deny him water and death will come in days. Only when he is denied air will death come faster.

Water has been responsible for the rise and fall of civilizations. Excavations of some 5,000-year-old ruins in India show the existence of water and drainage systems — even swimming pools. Ancient Egyptians built the first recorded dam under Ramses II in 1292 B.C., to store water from the Nile. King Solomon constructed the first aqueduct; and during the time of the Roman Empire, the Romans built some 200 aqueducts to supply water for their major cities.

Water has always been precious to man. Cattle barons and farmers fought over water rights in the American West. Today, in some foreign countries, the guardian-ship of water rights is a governmental function. Much of the management of water in the United States has been in private hands, but this is changing under the searchlight of public concern over environmental pollution. The work of securing large amounts of water for city dwellers is becoming more and more a community-government activity.

Water is one of the greatest resources Florida has. We use it for fire protection, industry, lawns and flowers, washing cars. We use it so extravagantly that at times of low rainfall we have to restrict

UNUSED WELL (cover photo) — A St. Augustine archaeologist points out an open, shallow well that dates from the 18th Century. Rimmed with conquina rock, the well is subject to drainage and contamination from surface waters.

water usage to the necessities only. During the drought of 1971, some South Florida restaurants served water to their customers only when they requested it.

Since 1889, the old State Board of Health (now Division of Health of the Department of Health and Rehabilitative Services) has been the government agency responsible for the people's health. This included the responsibility of protecting drinking water supplies for Florida's citizens. The health agency can regulate water supplies for the community — those that serve more than 25 persons. It recognizes the sacredness of the rights of the individual to supply his own water — as long as it does not become a public hazard.

Most people want a pure water supply — with no odor, color or impurities. Because of this, the people of Florida over the years have turned to the Division of Health and county health departments for assistance in locating private wells and testing drinking water supplies.

This issue of *Florida Health Notes* will tell you about water, where it comes from, possible shortages and the reasons for them, the different types of water supplies, the acquiring of potable drinking water, and about the relationship of water supplies to the septic tank. We will also discuss the public health significance of the two.

Our Water Supplies

The water supply on earth moves constantly in a cycle — a circulation of moisture and precipitation. The oceans and seas, which cover three-quarters of the surface, contain 97 per cent of the earth's

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It's A Matter of Taste

Water, without the problem of contamination from sewage, is sometimes hardly potable without treatment. Even if it is not contaminated, taste is not a criterion to determine water quality. One man's nectar is another man's castor oil. It can be pure but not particularly palatable. Some people like "sulphur water," others find it offensive. Some pay for highly mineralized water, others look upon it as a "dose of salts." In New York City, "Branch Water" sells for some 90 cents a half-gallon; and in some American cities, dairies deliver a bottle of water and a bottle of milk. Completely de-mineralized water is usually considered "flat" with no taste. Most Florida water has "character" but this is what causes the difference of opinions.

water. Only 2.25 per cent is contained in the ice and snows on the glaciers and polar icecaps; .7 per cent is in lakes, rivers and ground waters; and a small amount — .05 per cent is in the atmosphere at any one time.

This hydrologic (or water) cycle starts with the water in the ocean and seas. Radiation from the sun evaporates water from these bodies of water into the atmosphere. When it evaporates, the water rises and collects in the form of clouds. Under certain conditions, the cloud moisture condenses and falls as rain, hail, sleet or snow — the various forms of precipitation. The precipitation that falls on land is the source of essentially all of our fresh water. We depend upon it to replenish the quantities of water taken from lakes, streams and wells for man's use.

Florida's rainfall averages some 53 inches annually. Part of it drains off into rivers and lakes. Much of it is captured by plant roots and transpired through their systems back into the atmosphere. The rain that soaks into the soil, saturates it up to the ground-water table. In some areas of Florida, the water table lies just a few feet below the surface of the ground. Where the ground water is intersected by surface depressions, lakes or springs occur.

Some of the precipitation soaks below the plant root zone and under the influence of gravity continues downward through rocks



ARTESIAN SPRING — Millions of gallons of water bubble daily from fissures (marked by arrows) in the bottom of Salt Springs. Such artesian springs are favorite recreation spots for Florida residents and visitors.

and soil until it enters the underground water reservoir. Ground water penetrations may be affected by clay or marl — impervious rock that traps the water in pockets and changes the direction of flows. It is these geological formations of limestone and sand stone that make possible the artesian Florida Aquifer that supplies most of

the state's drinking water. This "magnificent rainbarrel" underlies most of the state. The more shallow Biscayne Aquifer serves the southeastern area of the state.

In West Florida, beyond Crestview, the sharp tilt of the limestone generally westerly makes possible water supplies from an overlying sand-gravel formation that has little or no mineral content.

The amount of fresh water in the state is not known, but test wells and observations made of many operating wells have located the limits of the aquifer and the estimated volume and quality of Florida's most valuable natural resource.

Florida also has 66 artesian springs which discharge some six-million gallons of water each per day. Seventeen of these are of the first magnitude whose flow exceeds 65-million gallons each daily. There are only 75 springs of first magnitude in the United States. Clear water and even temperatures make these springs year-round recreation centers in Florida.

Some cities along the seacoast have experienced a serious problem: the intrusion of salt water into aquifers from which too much fresh water has been pumped out. This has led to the abandonment of certain wells in favor of those further inland.

There has also been some lateral intrusion of salt water into fresh water canals. Fixed dams have been built to keep out the salt waters, especially during times of high tide.

The connate brine also is a problem. This is a residue from past geological periods when the peninsula of Florida was covered with salt water. These deposits of brine in the rock formation have never been flushed out. Consequently, the chloride or other mineral content is too high for public drinking supply use without specialized treatment for reducing minerals.

Water Crisis - Around the Corner?

Florida has its greatest resources in its water supply. We have plenty in our lakes, rivers, springs and aquifers. But unless we are careful, we could develop a water crisis. This could be due to:

- * intrusion of salt water from the Atlantic Ocean and Gulf of Mexico;

- * population explosion; — The development of suburban communities with overwhelming demands on the water supply from dozens of new industries, hundreds of shopping centers, thousands of new homes.
- * wasteful stripping of land; — The bull-dozing of wooded areas to build new subdivisions removes a reservoir for rain and moisture. The replacing of trees and undergrowth with paved streets and parking lots causes quick run-off of rain into streams and rivers. These rise suddenly and flood the countryside.
- * increased demand for water; — The per capita consumption of water has risen from 122 gallons in 1940 to 150 gallons in 1960. It is expected to rise to 165 gallons in 1975. Five gallons of water are needed daily to wash our hands, face, shave and brush our teeth. Every flush of the toilet requires about seven gallons. Washing machines, air conditioners, garbage disposals, and dishwashers create heavy demands. Domestic irrigation, watering of lawns and gardens, is a significant factor in the use of water in the average residential community.
- * continued water pollution. — Billions and billions of gallons of surface water are contaminated. Despite efforts to control pollution, many of the streams and lakes of Florida are contaminated by effluents from sewerage systems and industrial wastes from manufacturing plants.

Direct shortages of water can result in:

- * low water pressure in hydrants that hamper firemen's efforts to fight hazardous fires; such pressure can result in backflow into the water system and cause contamination;
- * inadequate water supplies for operating automatic clothes washers and dishwashers during high peaks of water demand; and
- * rationed water during dry spells that could reduce bathing, limit or forbid lawn sprinkling, cut off car washing.

According to a survey published by the U.S. Geological Survey, over 1,000 communities in the United States have suffered such water shortages and have had to ration water.

Shortages of rainfall lead to water shortages. The Northeastern corner of Florida currently is experiencing a nearly normal rainfall of 47 inches. This compares favorably with a 51-inch average. The state is subject to Nature's moods and capricious actions. One area of the state may suffer from a shortage of rainfall as low as 30 to 35 inches; another nearby area may be blessed with an over-abundance of some 80 inches. Changing rainfall patterns can lower water supplies drastically in one month and then flood the area the next.

Types of Water Supplies

The early inhabitants of the earth were able to drink their water directly from the streams. In those days, Nature was the major contaminator. Today, Floridians must secure their water from systems that are pumped into their homes. Unlike grandparents and great-grandparents, we moderns refuse to go to an outside pump for water for our homes.

Every Floridian deserves a sparkling, clean, non-corrosive and safe water supply. Communities grow and prosper by maintaining modern standards of water supply and sewage treatment. Every citizen of a community benefits more by adequate water and sewerage systems than by any other public works. Without treated water in abundance a community's health is endangered.

The expenditures involved in securing quality water are well justified by the results obtained. Industries are attracted to a community by a water supply of good quality.

By far the safest type of home water supply is derived from a community or public system — either municipally or privately owned. The systems have been developed by town authorities or sanitary engineers, usually under the supervision and guidance of the Division of Health. Plans are submitted for approval by the health agency. The water plants are required to be operated by men who are trained for the job and whose sole duty is to care for the safety of the water supply. All public water systems are tested regularly by the laboratories of the Division of Health and county health departments.

Today, approximately 80 per cent of Florida's population is on public water systems. Most of the systems serve people in urban areas



TAPPING THE AQUIFER

— A deep well drilling operation bores for water supplies 1,200 feet below the surface of the ground. Heavy equipment (opposite page) is needed to drill the 12-inch well which will furnish water supplies for a municipal water system.

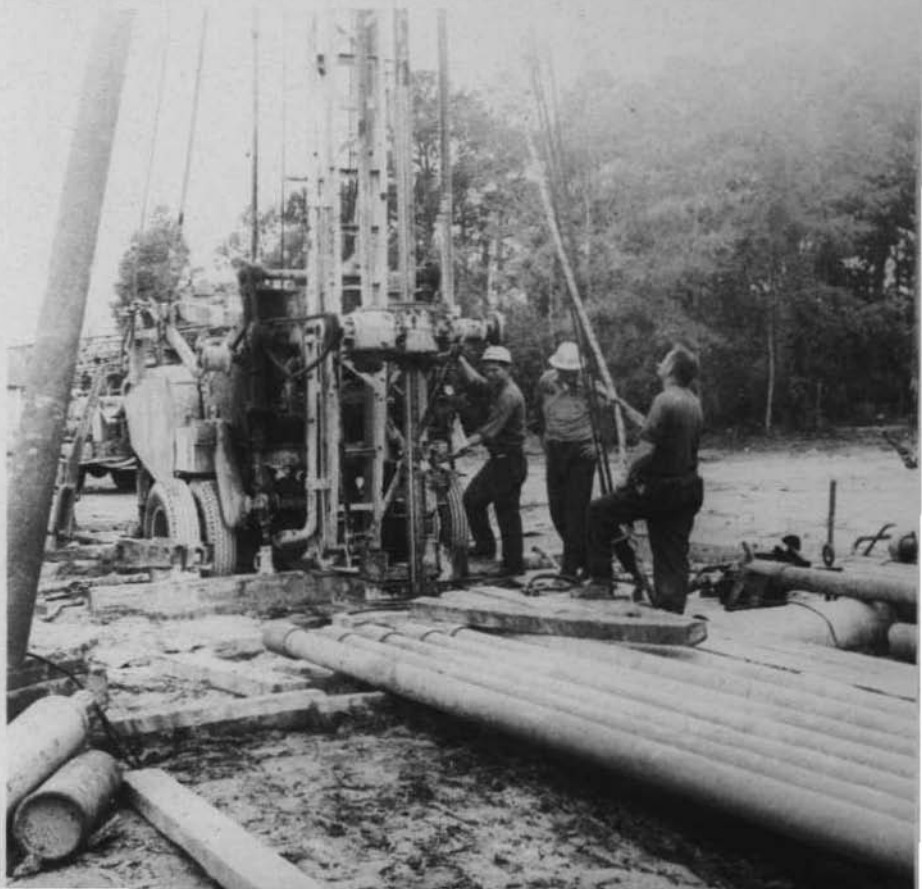
along the coastline and lakes. However, many rural or remote communities are now obtaining central water supplies through the Federal Farm Home Administration of the U.S. Department of Agriculture. This federal lending, or underwriting, agency finances rural or small water systems. Some of these are in areas where natural waters are heavy with minerals, high in iron content, have a bad odor or color; and therefore, are not suitable for individual household wells, and must be treated. These communities form non-profit organizations, water service districts, and hire engineers to draw up plans for water treatment and supply systems that are approved by the Division of Health. Many Northern and Peninsula Florida communities have acquired these systems.

No surface water, such as is obtained from rivers, creeks, brooks, ponds or lakes, is safe for drinking purposes under any condition except where it is treated and filtered in an extensive purification works. This is only possible through a central water system. Such bodies of water naturally drain from surrounding soil which may be contaminated with fertilizers, animal wastes — anything that happens to be deposited on the drainage sheds. Some Florida cities use nearby rivers or lakes for their drinking water and must give it extensive treatment. By comparison, the number of supplies from these surface sources is small. Most of the central supplies in the state come from groundwater sources.

Shallow ground water refers to water obtained from sources above any impervious protecting underground layer of rock. Such supplies are not as safe as deep-seated sources. However, the soil offers some purification action and if wells are properly constructed and protected from surface drainage, good pure water may be obtained. In some Florida soil formation, particularly loose or porous rock, pollution may travel for considerable distance; in dense soil, ground water is little affected from nearby pollution traveling through the soil. The chief danger of pollution from shallow wells, which may be from 12 to 15 feet in depth, is the surface drainage over the top of the well or around the casing, or from drainage from nearby septic tanks.

"Rock wells" in the northeasterly part of the state, which may be from 60 to 150 feet deep, are those drilled into pockets of water reservoirs in underground rock formations.

Deep-seated wells are those from which the water comes from a water-bearing layer below one or more impervious layers. These layers of rock, marl or clay shut off the water in the surface soil and protect the deep-seated water supply. As water can only enter the water-bearing or porous strata where they outcrop at the ground's



surface, or where there is a break or imperfection, the deep-seated water may originate some distance from the deep well's location. The traveling through the soil has a purifying effect on the water.

Unfortunately, the most usual protective layer in Florida is limestone which has a considerable number of imperfections in the way of channels and holes dissolved out by the slow action of water containing carbonic acid.

Deep-seated waters may be found at depths generally below 100 feet. Some wells are drilled as deep as 1,300 feet. As these wells are drilled, water-bearing layers are encountered as the drill goes down, each overlaid by and shut off from the others by impervious layers of rock. The deep-seated waters provide safer water supplies than shallow wells, but the water has a higher mineral content (harder water) and may contain hydrogen sulfide gas that smells like rotten eggs.

Rain water, as it falls, is very pure and safe. It contains very little mineral matter and is hence soft water. In localities where the municipal supply and private supplies are very hard, rain water is popular for use. It is collected and stored in cisterns. The danger lies in the system of collecting the rain water. It must be collected in clean troughs and protected in underground tanks or in cisterns from pollution and insects.

The Private Water Supply

Many of *Florida Health Notes*' readers are served by public water supplies. Many of us take our water supplies for granted — except when there is a break in a water main, or for some reason our supply is cut off for a short time.

However, about 20 per cent of Floridians have private water supplies. These are mostly rural families, or people who have built individual homes in fringe areas of towns and cities. These homes are a mixture of new and old — sometimes built close together on small lots. Here the location and depth of the wells and the proximity of septic tanks are very important.

Not enough can be said about the importance of a good and proper location for the family well. As previously stated, more wells are polluted by surface drainage flowing over the ground and entering the top of the well or around the casing, than by pollution

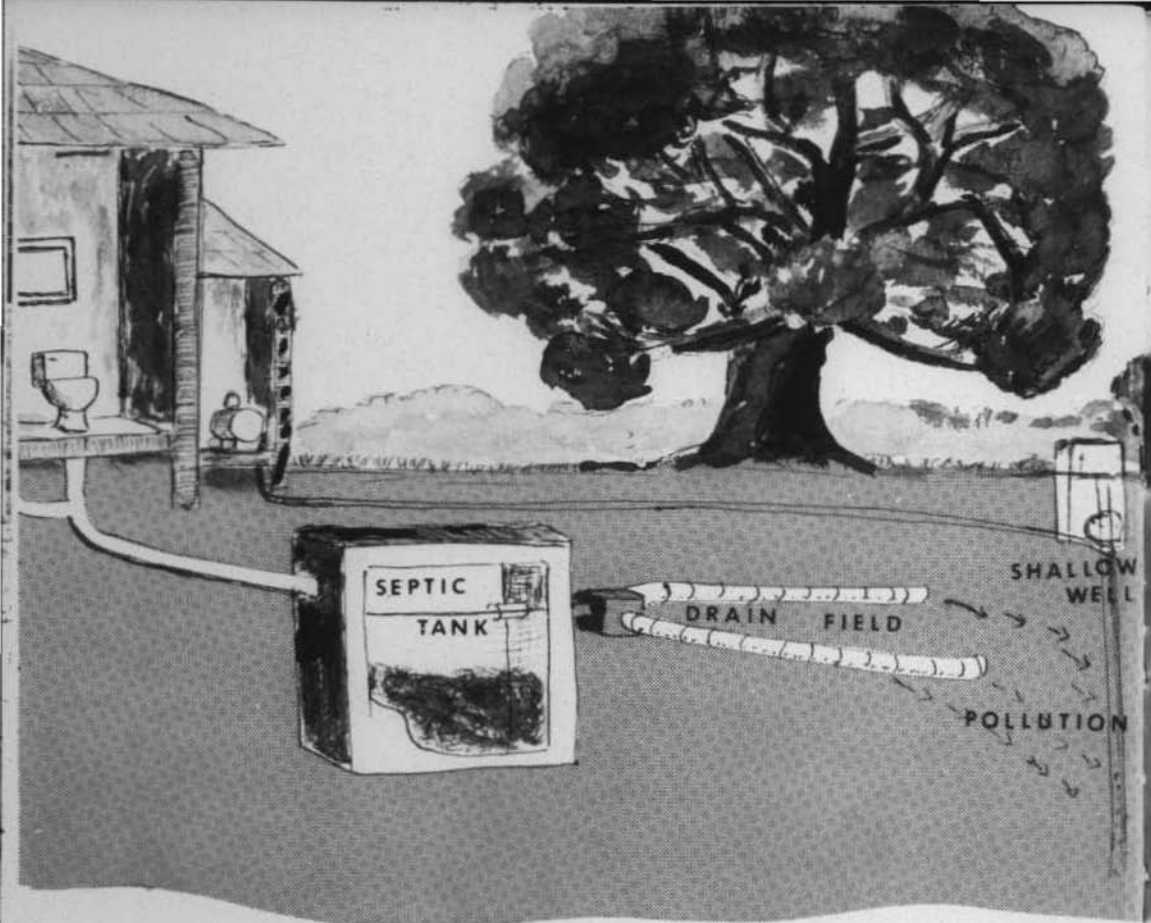
occurring in the actual ground water. Water beneath the ground flows as the water on the ground's surface — from high to low points. In the case of deep-seated waters, the slope has little relation to the contour of the surface of the ground. However, in the case of shallow wells, the slope is generally somewhat in relation to surface contours. But this may be changed under pumping conditions and rainfall entering the soil in the vicinity of the wells may pollute the water supply.

For the purpose of excluding surface drainage and minimizing travel of pollution through the soil to the well water, it is important that the well be located at a higher point than a septic tank, barn, residence, or other possible source of pollution. Most rural homes today have indoor toilet facilities connected to septic tanks. The water wells — should you have one — should be located as far from your septic tank as possible. You must consider your neighbor's septic tank, the size of your lot, and other conditions. The most important thing is that the septic tanks should be distinctly downhill from your well.

The depth to which the well must be drilled to get the most suitable water varies in different localities. This is particularly true of deep wells. However, drillers keep records and by this means the state's geologists and well drillers can predict the quality of water that can be found at various depths and select the most suitable water-bearing stratum. Drilled wells require the services and equipment of a skilled well driller who can advise the homeowner on the location and depth of the well.

The "old oaken bucket" carries loads of sentiment, but the bucket and its dug well were more than likely polluted by surface waters. You may remember the old dug well on the family homestead. The hole was curbed with loose cobble stones through which surface drainage could make its way into the water supply. Some dug wells were lined with boards which rotted out. A wooden floor over part of the opening was supposed to keep children and animals from falling into the well. The wood rotted and became full of cracks and holes; filth could blow or drop into the well.

The Division of Health has no jurisdiction over private wells — those serving individual households. However, those wells which serve gasoline service stations, schools, hotels, stores, factories, restaurants, camps, institutions, public buildings, or those serving the



POLLUTED WELL WATER — Effluent from the drain field of a septic tank leaches into a shallow well that is located too close. Even with private homes, the water supplies should be at least 75 feet from the septic tank and its drain field.

public — even those at interchanges on interstate highways — must have permits from the Division of Health.

A few counties have local laws that require that permits be issued for the driving of wells; the Southwest Water Management District, which contains 17 Gulf coast counties, requires permits for any wells over two inches in diameter.

Homeowners can request county health department sanitarians for assistance in securing private water supplies. This is basically to fulfill the requirements of federal lending agencies which insist on approved water supplies for homes. Citizens can secure advice on the locating, protecting, chlorinating, and sampling of new wells through the county health departments.

What is Sewage?

Homeowners seldom care where their sewage goes — unless it presents a problem. They frequently couldn't care less where their septic tanks are placed. Mr. Smith, who built a \$50,000 home in the suburbs, could not envision the spending of \$600 for proper sewer connections as a necessary item. Even though it could affect his health, sewage disposal was the last thing on his mind. This is the reason that Florida has regulations that influence the placement of septic tanks. The Division of Health is concerned with the proximity of septic tanks and wells that supply drinking water. Developers of some subdivisions have placed septic tanks too close to homes, in the water table, even under houses.

Because a home with a septic tank problem is hard to sell — or resell if the first owner has problems — loan companies are becoming more aware of the shortcomings of improperly placed or operating septic tanks. The homeowner may merely default on payments if he is having problems with his sewage disposal. Federal lending agencies are very careful about lending money on homes which do not have good sewage disposal systems.

People seldom think about sewage and its relationship to their water supply. But the difference between your water supply and your sewage is the distance between the faucets in your bathrooms and kitchen and the outlet drains. It is only a matter of inches. Along some rivers, notably the Ohio, the waste discharge from one city is recycled and treated to become the water supply of other cities downstream. We may be very surprised at what we are drinking!

The Division of Health defines sewage wastes as human and domestic wastes, liquids or matter from plumbing fixtures normally carried off by drains and sewers. These include bath and toilet waters, laundry wastes, kitchen wastes, and other similar material from household conveniences.

The Importance of Proper Disposal

The disposal of our wastes has a direct relationship to our health. Many diseases, such as diarrhea, shigellosis, dysentery, and other intestinal illnesses, can be spread by improper disposal of our waste matter. The quality or height of a civilization can be determined by the ways it disposes of its sewage.

Some of the most ancient civilizations had covered sewers that carried off their wastes. The Greeks and Romans had such covered sewers, but since they had no means nor knowledge of how to treat their wastes, the sewers flowed directly into nearby streams. Where there were large concentrations of people, such as in Rome, the streams were grossly polluted.

During the Dark Ages when sanitation was hardly considered, people in city streets were in danger of having "slops" thrown on them from windows above. There was no other means of sewage disposal. It was some 1,500 years after the fall of Rome before large European cities reached the sanitation sophistication of the Greeks and Romans.

Man has known for centuries that nature disposed of human and animal wastes. If the wastes were carried away from the living areas and spread thin, they would just disappear over a period of time. Chemical and biological action and erosion by rain and wind dispersed the solids; the benevolent bacteria killed the "bad" germs; evaporation carried away the moisture. But when men began to live close together, Nature's way of disposing of sewage was something less than satisfactory.

Early Floridians were content to build open-back privies. As our cities grew, we built combination storm and sanitary sewers. When high tides and storms reversed the flow of the sewers, the residents tolerated the presence of sewage in low lying areas and patiently awaited the passage of the storm and the return of the sewage from flooded streets to the sewers.

In addition to the open-back privies, Floridians also had cesspools to collect wastes from drains. These were simply holes — sometimes covered and sometimes not. The old State Board of Health continually urged Floridians not to build cesspools too close to their homes — especially under kitchen windows.

The septic tank was developed almost a century ago as an improvement over the old cesspools. The sewage from the house flowed into the settling basin from a short sewer pipe. In a cesspool, the sewage merely accumulated and eventually lost its water contents into the soil. The septic tank accumulated the solids in the sewage, and the liquid portion was spread over a large area by a series of sub-surface drain tiles.

The Rural Disposal Systems

We all know that when human wastes are not properly disposed of we have a lot of bad smells and sights. Hardly anything is more annoying to a homeowner or housewife than an overflowing sewer or toilet. When difficulties of this type are not cleaned up, they become very real dangers to our health.

There are many good ways of disposing of these dangerous and unpleasant wastes. At one time open-back privies were common. Today, Floridians are not allowed to construct, keep, use or maintain a privy from which excreta or urine is deposited on surfaces of the ground, or into waters of the state. The sanitary pit privy is an improvement over the open-back privy. It has been called a "monument to improved public health" and it still contributes much to the health of country homeowners. For years it was the best possible solution to sewage disposal for many rural homes.

However, the *Florida Administrative Code* says, "Pit privy installation shall not be permitted except at remote locations where electric service is unavailable and in no case shall such installations be permitted for homesites."

Where allowed, these sanitary pit privies must be built properly, absolutely fly proof and on a site where it will not contaminate sources of drinking water or bathing areas. The foundation, floor and seat riser must be of concrete or impervious material that will not warp, crack, or develop openings large enough to allow insects to enter, or excreta to leak out.

County health departments may allow temporary privies to be used at construction sites, fairs, carnivals, revival or tent meetings, encampments, rock festivals or temporary locations where large numbers of people congregate for short periods of time. The privies must be portable and self-contained, of non-absorbent material that is acid resistant, non-corrosive, easily cleanable, and water and fly-tight.

The New Septic Tank Code

The septic tank is an admirable facility for its purpose — the dispersal of the sewage from one residence situated on an acreage of suitable, porous, well-drained soil. Septic tanks have been satisfactory in many areas of Florida for years. But trouble began when the septic tank turned "city dweller" and moved into subdevelop-



READY FOR INSTALLATION — A pre-cast septic tank is ready for installation at a rural home.

ments. Problems began when contractors tried to adapt the "country cousin" to low-lying coastal areas.

Even where soil conditions were proper for the operation of septic tanks, failures occurred because the tanks were too close together. In many cases, the homeowner had his own water supply from a well — too close to the septic tank which contaminated his water supply.

For the past several years, the Division of Health has been working on new standards of individual sewage disposal facilities (septic tanks and sanitary pit privies) to prevent such contaminations. The new rules and regulations of the *Florida Administrative Code* went into effect in December 1971.

The regulations set forth the minimum standards for design, construction, operation and installation of individual sewage facilities used for the disposal of human excreta and sewage wastes. Written approval for the use of such facilities must be obtained from the Division of Health before they can be installed or used. The application for approval is made on a form provided by the Division of Health which it uses to determine the suitability for the use of individual sewage disposal facilities. No political subdivision of the state, such as municipality or county, can issue a building or plumbing permit for any building requiring the use of individual sewage disposal facilities until the owner or builder has received prior written approval for the facilities from the Division of Health.

Where an existing adequate sanitary sewer of a sewerage system is available in a public right-of-way or easement abutting the property, or within 100 feet of the property; a septic tank cannot be installed; and drain pipes from the building must be connected to the sewerage system.

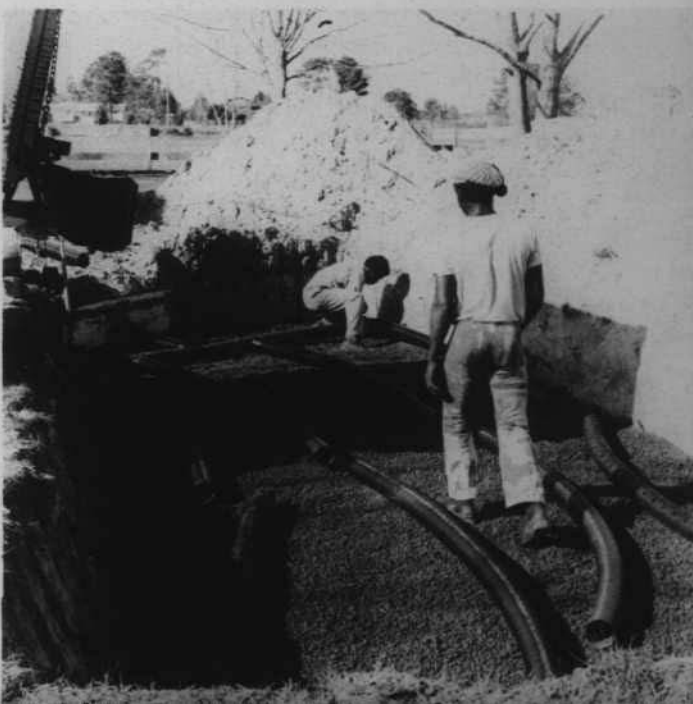
Sewage wastes and effluents from individual septic tanks cannot be discharged into or permitted to enter streams, surface waters, or the underground aquifers, or into ditches, drainage structures, or on the surface of the ground.

Installing the Septic Tank

Nearly all Floridians have water piped into their homes. Where running water is available, most people have bathrooms. In rural areas where public sewage systems are not available, the bathroom fixtures, laundry facilities, and kitchen sink are connected to the septic tank.

A good septic tank is a concrete, underground chamber or vault constructed in such a manner that heavy particles in the sewage settle to the bottom. Most of the septic tanks installed today are of precast concrete. However, the *Florida Administrative Code* allows tanks to be poured in place (providing the cement is of an approved formula), built of bricks or concrete blocks. Those built of bricks or blocks must be plastered inside with cement mortar and watertight with

LAYING THE DRAIN FIELD — Perforated pipes for the drain field of a septic tank are laid out on a bed of special filter material.



walls at least eight inches thick. The tanks must have seamless bottoms and sides. The covers of the tanks must be of one piece and from three to four inches thick; ventilation must be through plumbing vents in the buildings.

The septic tanks must be connected to the house by a tightly-joined drain pipe. Leading away from the tank is a system of drain tiles laid six to 24 inches below the surface of the ground. This system has joints that allow the sewage to seep into the soil. Should the system have two or more lateral lines of drain pipe, a distribution box must be provided between the septic tank and the absorption field. The laterals cannot exceed 100 feet maximum length and when there are two or more, they should be the same length.

The septic tank must be installed so that it will function in a sanitary manner and not create a nuisance, health hazard, or endanger the safety of any domestic water supply. Consideration should be given to the size and shape of the lot, slope of ground surface, water table elevation, characteristics of soil, proximity of existing or future water supplies, and possible expansion of the sewage system.

According to the *Florida Administrative Code*, the individual sewage disposal facility should not be located laterally within 75 feet of any individual water supply well, or within 100 feet of any public water supply. Location must be downhill or at a lower elevation than water supply wells where the ground slope permits.

The septic tank cannot be located under or within five feet of a building, within 10 feet of water supply pipe lines, or within five feet of property lines. It cannot be located within 50 feet of the high water line of lakes, streams, canals or other waters; and installation should not be in low, swampy areas which have high water tables (either permanent, fluctuating, or seasonal), nor areas that are subject to flooding.

Septic Tanks and Subdivisions

When septic tanks were used in rural or sparsely settled areas, they presented no real problems. But when contractors started installing them in subdivisions, trouble began. Hard rains raised the water table in many subdivisions near the surface of the ground and in areas where septic tanks' drainfields were located, the soil was completely saturated with water.

Sewage rose from the sub-surface and seeped through the top of the ground. Homes that were constructed on floor slabs on the ground and were only a foot above the finished grade level found that the waste water would back up into the house to such an extent that the toilet bowls and bathtubs would overflow every time the toilet was flushed.

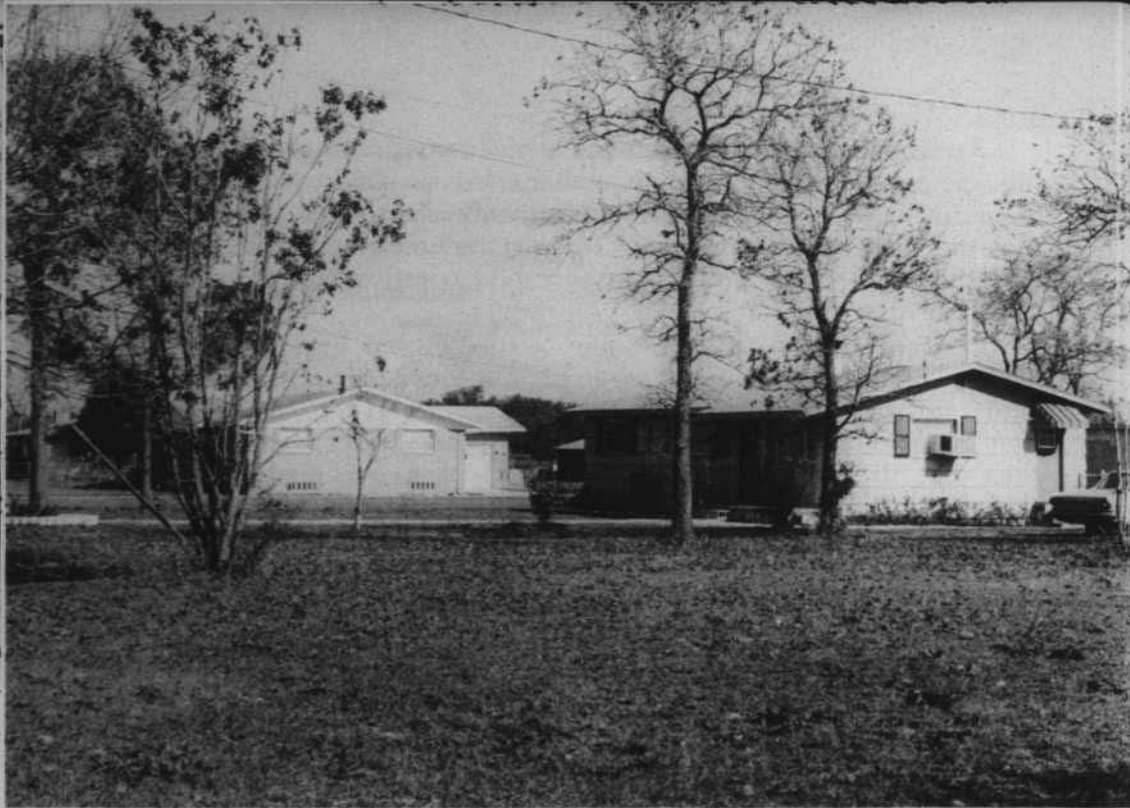
Concentrations of septic tanks in subdivisions bring about the dangers of disease. In order to combat the concentrations of individual sewage disposal systems, the *Florida Administrative Code* says that builders of subdivisions must install public water systems at the time that 30 per cent of the subdivision's lots are occupied by homes (except that service must be available when approved quality water cannot be obtained from individual wells).

The Division of Health wants urban water and sewage service for urban areas. When subdevelopments reach 50 per cent of density — or one-half of the lots in a given platted area are occupied with homes, the builders must provide an adequate sewerage system.

For urban subdivisions platted and recorded prior to January 1, 1972, applications for septic tank permits made prior to January 1,

NO PLACE FOR SEPTIC TANKS — This subdivision of several hundred homes between the Atlantic Ocean (background) and the Intracoastal Waterway (foreground) must of necessity have a sewerage system and a public water supply. Septic tanks would not work properly in this congested area. (Photo courtesy of Florida News-Bureau-Department of Commerce)





'RURAL' HOMES — Modern homes in the fringe areas of a city usually have individual septic tanks and water supplies. When the area becomes crowded, there is danger that the water wells may become polluted.

1977, will be considered on the basis of an evaluation of soil characteristics, water table elevation, history of flooding, and records of service of existing installations in the same general area.

On and after January 1, 1977, permits shall not be issued for any urban subdivision until plans, programs, and timetables for development of water and sewerage systems have been submitted to and accepted by the Division of Health.

Public Health Significance

John Rogers and his family bought a home in a well-established Florida subdevelopment by assuming the payments of another homeowner. The season was dry, and Mr. Rogers, who was eager to move into the first house he had ever owned, gave no thought to potential health hazards.

Then came the first big rainstorm. The neighborhood was flooded and sewage started to seep up through the soil. The entire

area started to have a bad odor. Mr. Rogers still gave little thought to the dangers until his children became ill. The physician suggested that he get his water tested through the county health department.

It was then that Mr. Rogers found out that he had a well to supply his drinking water and a septic tank in which he discharged his waste. He also found that his neighbors had the same problem. The report from the health department came back saying that the water was contaminated. Further investigation showed that the home had been built and the septic tank installed several years before by a contractor who had used private capital and had had no direct supervision from the county health department.

If Mr. Rogers had given a little thought to the health aspects of his home before buying it and investigated the type of water supply and sewage disposal, he could have saved some money and heart-break.

Water and sewage have public health significance. Together, they could present a real danger to human health. This is the most important reason for the Division of Health to regulate public water supplies and the installation of septic tanks.

There is a finite amount of water on earth. More water cannot be created; neither can it be destroyed, but the water we have can be made unuseable. There is an increased demand for more water by a growing population, expanding economy, more industries. More and more pipes are being driven into the Florida aquifers. More and more pumps are sucking water from the underground water supplies. This creates a suction that pulls the effluent from septic tanks more rapidly into the aquifers.

We are not giving Nature a chance. We are recycling the water on our planet too fast. Instead of allowing the effluent to trickle down and purify itself, the increased flow is not giving Nature time to oxidize it and to kill the bacteria that come from our intestinal tracts. The diseases that we can spread through effluent seeping into our water systems are numerous. Some of the more important are: cholera, infectious hepatitis, salmonellosis, paratyphoid fever, shigellosis, leptospirosis, poliomyelitis and typhoid.

- * Occupants of nine mountain homes in Kentucky contracted infectious hepatitis. Septic tanks effluent was suspected.

When a dye was poured into one tank, it appeared shortly in the wells and drinking water of the other homes.

- * Last year, several children and adults in Jacksonville came down with shigellosis after children had been playing in mud puddles. Investigation showed that the puddles were created by overflow from a nearby septic tank.
- * Other incidents have occurred in the United States in recent years:
- * Over 180 adults and children of a Central Pennsylvania town contracted infectious hepatitis when the virus seeped from a septic tank's drain field into the town's water supply system.
- * A total of 122 persons at a Tennessee camp came down with infectious hepatitis and gastro-enteritis when sewage from a broken sewer line trickled into a spring from which the camp obtained its drinking water. Fluorescein dye was placed in the toilets of a cabin and showed up in the spring in less than an hour's time.

A hundred years ago, the water supply of the average American city was described in the following terms:

"The appearance and quality of the public water supply were such that the poor used it for soup, the middle class dyed their

TESTING WATER SUPPLIES — The Division of Health's laboratories have been testing water supplies for disease-carrying bacteria since 1902.



clothes in it, and the very rich used it for top-dressing their lawns. Those who drank it, filtered it through a ladder, disinfected it with chloride of lime, then lifted out the dangerous germs that survived, and killed them with a club in the backyard."

This was an exaggeration but many large cities could not boast of a good pure water supply until late in the 19th Century. Public sewage systems were to come even later. But despite advances in water and the building of sewerage systems, epidemics of water-borne diseases occurred in many cities.

In Florida, hundreds of cases and many deaths were caused by typhoid about the turn of the century. The disease caused 12 deaths and 66 illnesses as recent as 1946, and only last year, 13 persons were made ill by typhoid. The last typhoid death occurred in Florida in 1965.

Pure Water - Necessity of Life

Because potable water — a water satisfactory for drinking, cooking, or use in the home — is a basic necessity of life, the Division of Health has several recommendations for the homeowner who has a private water supply. As previously stated, a private water supply is one that supplies an individual household.

- * **LOCATION:** The well should be located on high ground, not subject to flooding and 75 feet or more from any source of pollution, such as septic tanks, drainfields, privies, stables, and barnyards.
- * **TYPE:** The drilled well, properly located, encased with steel or wrought iron pipe, is the safest type.
- * **DEPTH:** The source of water supply should be from deep, non-polluted water-bearing formation, not less than 20 feet below natural ground surface, or with outside casing seated in tight rock or clay.
- * **PUMP:** Force-type hand pump or the pressure-type electric pump should always be used to eliminate contamination from atmosphere or nature's elements. The pump should be attached to the casing with a watertight sanitary well seal.
- * **SURFACE PROTECTION:** Protect your well from surface contamination with a concrete platform at least six feet square constructed around the well casing at ground surface.

- * **STERILIZATION:** Sterilize or disinfect a new well or a well after repairs by thorough chlorination before using the water for human consumption.
- * **SAMPLING:** It is wise to have a bacteriological test made on a water sample from your new well for assurance of its purity. This may be done through your county health department.

The Basic Essentials of Life

Air, water and food — in that order of importance — are the three basic essentials for man's existence. In the light of today's urban population, we could add a fourth — sewage disposal. Every other feature of our lives is to some degree a luxury or an aid to our adjustment to the environment.

We have an abundant supply of air, still relatively pure, which we warm in winter, cool in summer, or air condition with expensive machinery. In the search for food we demand elaborate packaging of our daily groceries. Yet, we who are so discriminating accept with childlike faith whatever water flows from our water taps and the disposal of our wastes that flow down the drain.

The confidence that many Floridians have in their water supply is justified. The Division of Health has an ongoing program for the sanitary control of public or central water works serving rapidly increasing populations of the water service areas. Some of the water systems in Florida are equal or superior to the best anywhere in the world. Some of the municipal sewerage systems are equally as fine.

But some 70 per cent of the people in Florida live in areas which are less than 25 feet above sea level and they don't have to dig very far to get water. It is these areas — urban areas with high water tables — where people need to be careful of where they secure their water supply, and where they dispose their wastes.

The Division of Health is legally responsible for the health of the people of Florida and their 23 million annual visitors. It is to protect your health and that of your family that the health agency and the 67 county health departments review plans for public water supply and sewerage systems and the installation of septic tanks.

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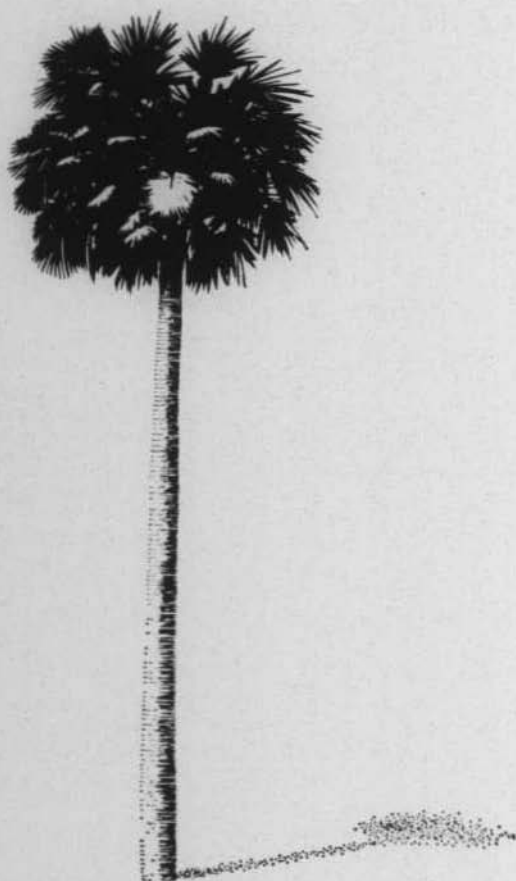
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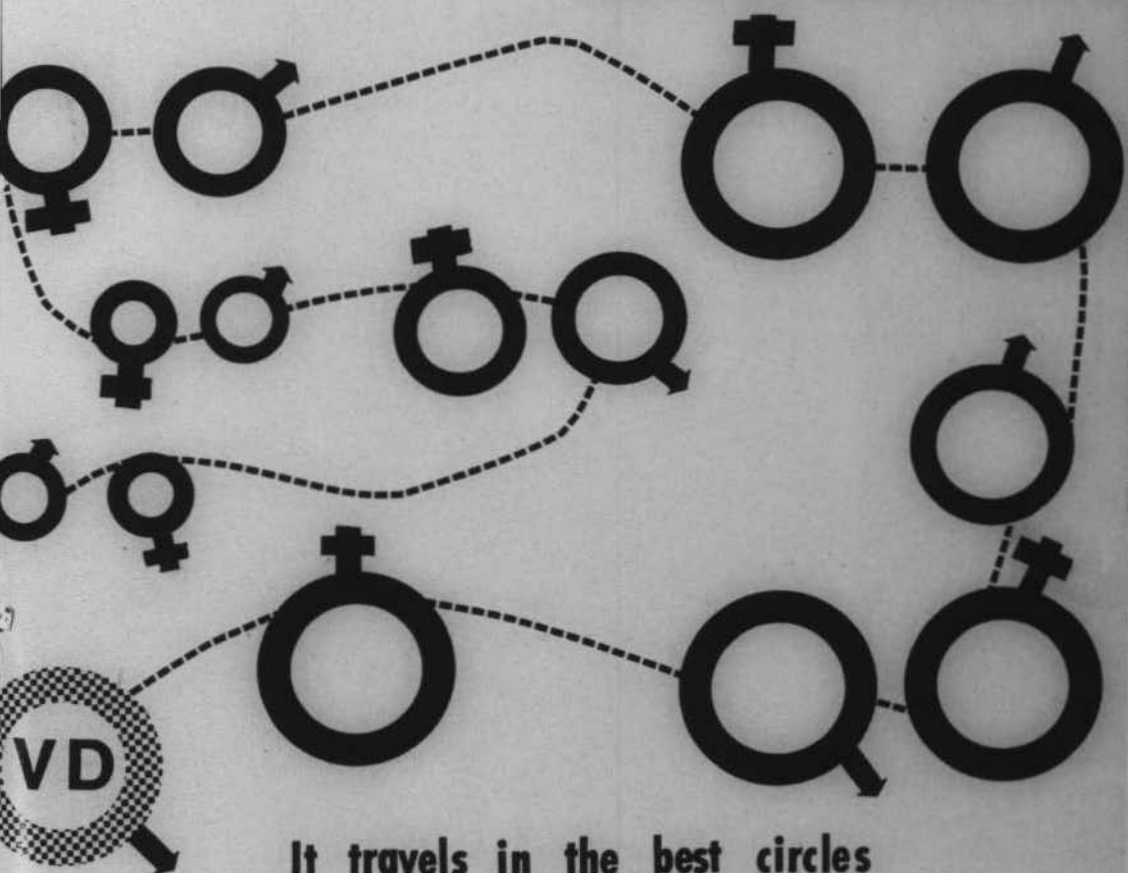
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FLORIDA HEALTH NOTES



It travels in the best circles

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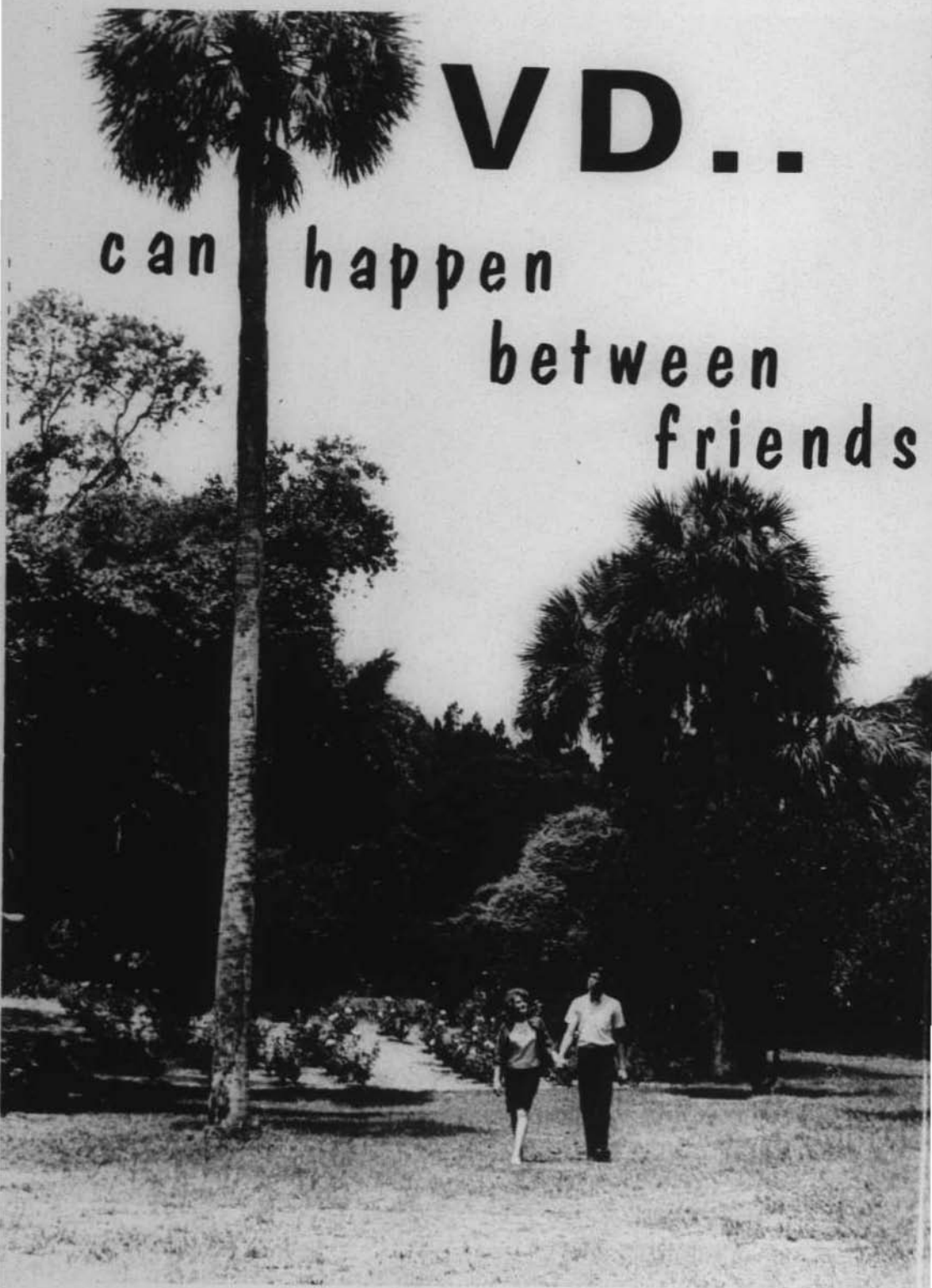
A Second Class Publication

The Silent Epidemic

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VD..

can happen
between
friends



THE silent epidemic

Any one can contract venereal disease — farmer, Boy Scout, secretary or her boss, insurance agent, legislator, school teacher, laborer, butcher, baker or candlestick maker. One intimate sexual experience with a friend — or stranger — can lead to venereal disease.

What is venereal disease? The name comes from the Latin word *veneris* which is derived from the name Venus — the Roman goddess of love. It is acquired by people who have had sexual contact with an infected person. Because of the intimate nature of the disease, there are sundry myths and superstitions about it. Any tendency toward “free love” is a pathway for the spread of venereal disease. Lowered moral standards which tolerate sexual promiscuity, perversion, and other social ills allow for the transmission of the diseases of Venus. They have been called “bad blood,” the pox, clap, drip — but today, they are becoming the “silent epidemic.”

The two major venereal diseases are syphilis and gonorrhea. We will be discussing these two. There are three minor venereal diseases — chancroid, granuloma inguinale, and lymphogranuloma venereum. Altogether these last three diseases have relatively few cases, in comparison to the others, and they are less of a public health problem.

The venereal diseases are on the increase in the United States and Florida. Together they are the leading reportable communicable diseases in the Sunshine State.

Gonorrhea has reached epidemic proportions in Florida after experiencing a steady climb from the early 1960's. Cases totaled over 30,000 in 1971. This was an increase of some 16 per cent over the previous year.

On the other hand, infectious syphilis has had a very respectable decline from 1965 to late 1970 when it started an upward trend. In 1971, the disease was up 19.8 per cent over 1970 with some 1,675 reported cases. However, cases of early and late latent syphilis and congenital syphilis decreased during the past year; over the last 30 years, deaths from syphilis dropped considerably. Still the maintenance in mental institutions of patients with syphilis psychoses (complications) costs Florida's taxpayers over \$700,000 a year — more than the total budgeted for venereal disease control.

This issue of *Florida Health Notes* will take a look at syphilis and gonorrhea. We will tell you about their histories, the symptoms and treatments, what groups are mostly involved, the methods of spread, the epidemiology (investigation into causes and control), and what the Division of Health of the Department of Health and Rehabilitative Services is doing about this "silent epidemic."

Why Does Florida Have a High VD Rate?

Who are the ones with venereal disease? People may say, "It is not my problem!" "Who cares?" "It can't happen to me!"

But venereal disease can happen to anyone who may have even one sexual experience. The majority of cases are among the ignorant, the uneducated, the poor; but there has been an increase in the

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MARCH, 1972



VD...

PEOPLE

POLLUTANT

number of cases among the upper classes. In addition, it is a problem among the mobile populations of our community, being spread by some of the 23 million tourists, merchant seamen, military personnel, long-distance truck drivers, prostitutes, and homosexuals.

Last year, more than half of the cases of syphilis and gonorrhea were reported in those persons between the ages of 15 and 34. During 1970, these age group accounted for 90 per cent of the gonorrhea cases, and some 70 per cent of the infections syphilis.

Holiday and business travel is an important factor in the increase of venereal disease. Travel multiplies the opportunities for sexual encounters and hence for the spread of disease carried by personal contact. High venereal disease rates have always been noted among the mobile population of the community.

Changing behavior patterns also have affected the spread of venereal disease. The post World War II years saw the development of a permissive society in which "doing your own thing" often meant one thing in particular—indiscriminate heterosexual and homosexual behavior. Communication media have given much attention to sex, made it a part of advertising, and this has created a vicious circle of sex and venereal disease.

The traditional restraints of religion, family, and public opinion have been on the wane. The rates of divorce, broken homes and illegitimacy continue to mount. Fear of venereal diseases has lessened with the knowledge that a simple effective treatment is available and apathy resulting from this knowledge has led to the problem of the chronic repeater.

Technological progress has produced improved contraceptives — the pill and intrauterine device. But unlike the condom, these offer no protection against venereal disease. Furthermore, they promote promiscuity by permitting a greater number of sexual contacts without fear of pregnancy, and thus foster the acquiring of the disease.

Twenty-five per cent of infected patients seen in public health clinics in large metropolitan areas are homosexual males. Rectal and oral infections have been reported on the increase in men.

The control of the disease presents special problems. Because of the nature of the disease, and superstitions and stigma, many individuals who are infected either have no symptoms or fail to recognize them, and therefore do not voluntarily seek medical help.

TRAVEL — for business or pleasure — multiplies the opportunities for sexual encounters and contributes to the spread of venereal disease.



Because the disease usually is acquired through illicit sexual behavior, individuals may be reluctant to seek medical attention. When they do, physicians may not report those persons whom they have diagnosed and treated.

SYPHILIS

Probably no disease, communicable or chronic, has received more attention than syphilis. From its recognized appearance in a great epidemic in Europe over four centuries ago to the present time, it has caused great concern and controversy. Because of the nature of the disease, its eradication seems impossible—or difficult at best. Despite efforts to combat syphilis, it is a major health problem in Florida today.

A Syphilis Epidemic

The origin of syphilis lies in mystery. There are many theories as to how it began. The disease seems to have been recognized in ancient times. Some of the references to leprosy in the Bible may have been to syphilis. What seem to be references are made in ancient Hindu, Hebrew and Roman writings. Another theory says it originated in the late 15th Century during the early days of the Age of Exploration. In India, it was seen after the visit of the Portuguese explorers; in Canton, China, it appeared after the visit of other Europeans; in Japan, it was attributed to Chinese and Portuguese sailors.

In 1494, King Charles VIII of France besieged Naples. In his army were soldiers of fortune from nearly every other country of Europe. Female camp followers bestowed their favors on the army of King Charles and the Neapolitans alike. When his army took Naples, King Charles prepared for its permanent occupation, but dissipation and disease did what the Italians could not. A plague attacked his troops and the undisciplined men evacuated the city and retreated from Italy. The disorganized army scattered over Europe and returned to their own countries, carrying the new disease with them. Low moral standards of the period helped spread the disease.

Syphilis was called by various names at first. The French called it the Spanish disease; the Spaniards, the Neapolitan disease; the English, the French disease. All blamed their political enemies for their misfortunes.

An Italian pathologist wrote a poem in 1530, which described the plight of a shepherd named "Syphilus." The shepherd, angered because of the death of his animals and his own sufferings due to a drought, accused the gods of being jealous of the great herds. He built an altar to his king. Others followed his example. The angered gods caused a series of misfortunes to fall on the land, including the terrible plague. Syphilus was the first victim. The myth caught the public's fancy and from that time on, the disease became known by the name of the shepherd boy.

Symptoms of Syphilis

Syphilis was recognized as a new disease because of its severity. In all of medieval and ancient literature, prior to 1493, there is no certain reference to a disease of the genitals which had the syphilitic syndrome.

The disease compelled attention by the severity of its manifestations. As when an infectious disease first appears in a susceptible people, it raged with unusual severity. This has been noted with measles, scarlet fever, and smallpox in modern epidemics among isolated peoples.

Early cases had severe symptoms of high fever, intense headaches, and bone and joint pains. Early skin symptoms were so severe that they simulated smallpox. Great prostration and frequently death occurred during the secondary stage — a rare occurrence today. Within 50 years after the early outbreak of the disease in Europe, the severity of the symptoms diminished and it assumed the characteristics with which we are now familiar.

Syphilis is a very complex disease. It presents the same clinical picture in both men and women. Because of the variety of clinical symptoms, Sir William Osler, the noted Canadian physician, wrote that a physician who knew syphilis knew medicine.

The organism that causes syphilis is a corkscrew-like spirochete. Man is its natural reservoir. It can be found in the secretions of early syphilis lesions by using a special technique called "darkfield microscopy." The spirochete is very fragile and dies quickly outside the body or when treated with antiseptics. Contamination of a surface, such as a glass, dish or toilet seat, with the infectious

VD - TRICK OR TREAT?



If your son is old enough to shave He's old enough to get **SYPHILIS** or **GONORRHEA**. Can you discuss this problem without embarrassment?

material does not represent a source of infection. Spread of syphilis is only by intimate contact with infectious lesions. On rare occasions, syphilis can be transmitted by kissing.

The course of syphilis is commonly divided into four stages: primary, secondary, early latent, and late latent stages.

The first sign that a person is infected usually shows up 10 to 90 days (average 21) after sexual intercourse with an infected partner. This is a painless, hard lesion (chancre) at the site of the infection where the spirochete enters the body. This is usually on the penis of the male, on the vulva or within the vagina of the female. As the result of other sexual contacts, primary lesions may also be found around or within the rectum and on or in the mouth. The blood of the individual begins to show a positive test for syphilis shortly after the appearance of the chancre. Even without treatment, the primary lesions will heal, but the organism remains active in the deep tissues of the body.

The duration of the primary lesion is from one to five weeks; then it may go into a latent state for two to ten weeks with no

symptoms other than a positive blood test. One-third of syphilis victims have no latent stage at this point in the course of the disease.

The secondary stage may then begin and last from two to six weeks. During this state, a rash may appear on the palms of the hands, soles of the feet, or other parts of the body. This may resemble other skin conditions. Other symptoms are fever, persistent sore throat, patch baldness, wart-like sores around the genitals and anus, lesions of the mouth and throat. The spirochete may invade the central nervous and the cardiovascular systems at this time. As in the primary stage, all of the rashes and lesions will disappear after persisting for a time, even without treatment. Again the organism is alive deep in the body tissues.

The Progress

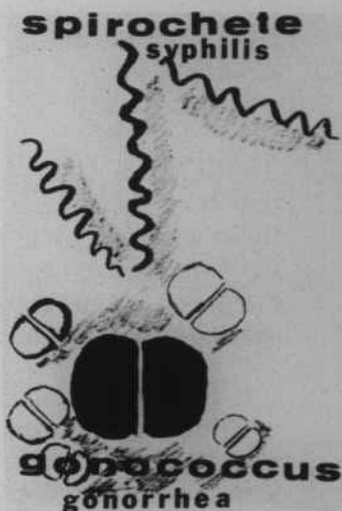
Effective Contact	Incubation 10-90 days (average 3 weeks)	PRIMARY Duration 1-5 weeks	Period of latency 2-10 weeks
Transmission resulting from direct contact with infected lesion during sexual intercourse	No signs or symptoms; blood test negative	Blood test negative for week or longer after chancre's appearance; then test is positive	No signs or symptoms; blood test positive; 1/3 patients have no period of latency
EXPOSURE	INCUBATION	PRIMARY	LATENCY

Latent syphilis is hidden syphilis. During this stage, the spirochete goes underground in the body. There are no clinical signs except a positive blood test. Late syphilis is not infectious, except in the case of a female who can transmit it to an unborn child. The length of the latent period varies. Some individuals may have no further symptoms, but some may have lesions that are chronic and highly destructive.

Many years may follow before the late stages of syphilis are reached. It may be too late for treatment at this time. Individuals may suffer from mental deterioration, paralysis and death, blindness, deterioration of the knee joints, heart disease, or tumor-like growths in the skin, bones and internal organs. Even though the progress of

of Syphilis

SECONDARY	Early	Late
Duration 2-6 weeks	latency; Up to 1 year	latency; years later
Rash on various parts of the body; blood test positive	Disease underground; blood test positive; only female infectious, can give disease to her child	Disease shows itself by paralysis, crippling, mental ill- ness; blind- ness, death. Mother can infect child.
SECONDARY	EARLY LATENT	LATE LATENT



the disease can be stopped, irreparable damage may have already occurred in the affected body systems.

Syphilis can be transmitted to an unborn child before birth. The organism can pass from the mother's blood to the blood of the child and cause infections which may either kill the child or leave it with permanent effects of the infection.

A child who is born alive with congenital syphilis will have a variety of problems. Most usually affected are bones, teeth, eyes and central nervous system. Bone deformity of the skull and long bones of the limbs are common. Teeth may be deformed, eyes blinded, brain damaged, hearing destroyed; the child may also be mentally retarded.

Diagnosis and Treatment

It is not wise to make a diagnosis of primary syphilis upon the appearance of the lesion alone. Sometimes the most typical lesion is not a chancre, and frequently the most unlikely sore is one. Public health physicians agree that the final diagnosis of primary syphilis is strictly a laboratory procedure and should never be made without laboratory confirmation.

Blood tests are the most common method of diagnosing syphilis; but they sometimes can give negative results from several days to three weeks after the appearance of the chancre. It is necessary that the infection be found as early as possible because not only is the disease more communicable at this time, but it responds more favorably to treatment than at any other time in its course.

The early stage of syphilis is best diagnosed by a "darkfield examination." Ordinarily in the examination of specimens by microscope, light is passed through the specimen from below and on through the lenses to the eye. Bacteria or other objects are thus seen as more or less transparent bodies.

The darkfield microscope, through an arrangement of its lenses, does not permit the light to pass through the specimen but throws the light across the field. The syphilis spirochete is highly refractive to light and the organism appears as a brightly illuminated body against an almost black background.

It is important that the specimen be a fresh one because the spirochete must be alive and its movements noted. This is so the epidemiologist can be certain of its identity. Most darkfield diagnoses are made in clinics, large laboratories, or in offices of specialists in the control of syphilis.

Syphilis, from the beginning, confounded the medical world. Because the symptoms affected the reproductive organs of men and women, much superstition arose about the disease. Medical literature of the 15th and 16th Centuries described how victims of syphilis were burned with hot irons, anointed with evil smelling and imperiling ointments, roasted in hot rooms, heated in stoves, and given drugs, physics, herbs and potions.

Mercury, which had been used for scabies, leprosy, and other skin diseases, was introduced as a treatment for syphilis almost as early as the disease was discovered. The element was given in four ways: by mouth, by inunction, by salves, and by fumigation. Other drugs, and chemicals, such as neoarsphenamine and iodobismutol, have been used over the years. Before the discovery and the availability of penicillin, tens of thousands of patients were treated with these chemicals and drugs in county health department clinics; and the old State Board of Health, now Division of Health, operated several Rapid Treatment Centers between 1943 and 1952 where many thousands of other patients were cured.

Penicillin became the most effective method of treatment for syphilis in 1946 and revolutionized the venereal disease program. Twenty-six years later penicillin is still the best method of treatment for syphilis.

The U. S. Public Health Service and Division of Health have recommended a schedule of treatments to private and clinic physicians. Due to the availability of an easy cure, the change of moral attitudes, and the apathy of the public, health authorities are finding that many sexually promiscuous persons are repeaters in public health clinics. Recovery from syphilis after penicillin treatment is excellent. Following the treatment, no further deterioration due to the disease will occur; only a few cases will result in treatment failure.



You only get **VD**
from
PEOPLE

Shoe-Leather Epidemiology

Harvey slipped into the county health department's venereal disease clinic on a bright, Florida morning. He had a sore on his privates and he was afraid that he had a venereal disease. Following registration, he was called into an office and given a physical examination by a physician.

A darkfield examination was made and he was found to be positive for primary syphilis. Following treatment with penicillin, he was interviewed by a venereal disease consultant who asked about his sexual contacts of the past few months, and other persons whom he felt needed examination. Because of the method of transmission by sexual intercourse and the intimacy involved, the health department

personnel went to extreme measures to show him that everything he told them would be held in confidence.

Harvey named three heterosexual and two homosexual contacts. One he picked up in a local bar; one he met at a party; two he met on the beach; and one while on vacation in California. He identified four of the contacts with names and addresses. He only knew the first name of the fifth person. Venereal disease investigators started pounding the sidewalks of the city to locate the sexual contacts with whom Harvey had had sexual relations. A telephone call was made by the Division of Health's Venereal Disease Control office to its counterpart in California. The girls and men were located and identified within 24 hours. One girl was found to be infected with primary syphilis. She was interviewed about her sexual contacts and again the investigators started the search for the persons named by her.

Medicine has established a successful treatment for syphilis. If the problem of its control involved only material factors, syphilis would be a relatively simple problem of sanitation. But these are only part of the factors. The control of syphilis involves the problem of sexual relations. It involves the mores, traditions, and customs of society, and the sentiments, emotions, moral convictions of individuals that are the results of centuries of prejudices. These are intangible, but realistic reasons for the difficulty of control.

The average person with venereal disease names four sexual contacts. Infected people are usually sexually promiscuous. The men and women who confine their sexual relations to one mate do not infect themselves or others. If they have syphilis that is untreated, it dies with them.

The Trend of Syphilis in Florida

Because of the crippling course, syphilis has been recognized as a public health problem since the 15th Century. Prior to World War I, the State Board of Health considered the disease as an important public health problem — along with hookworm, stomach worm and other diseases. Private physicians frequently took Wassermann tests; but since there was no easy cure, no cognizance of the disease was made after diagnosis.

In 1918, venereal disease clinics were established in Tampa, Arcadia, Miami, Pensacola, and Key West. The U. S. Public Health Service and Red Cross operated a clinic in Jacksonville. Public health officials discussed the problem with civic and governmental groups, druggists and physicians; distributed literature; and took blood specimens of prisoners in jails and prisons. But there was little attempt to search out and treat victims of the disease. A Bureau of Venereal Disease was formed in 1918 which was financed by some \$4,000 in federal and state matching funds. However, the program was eliminated during the post-World War I period.

The Venereal Disease Control Program of the old State Board of Health was reorganized in 1938, given federal money for drugs, and started rolling during the days of World War II. Conscription of American men during the war showed that venereal disease was a major health problem. In 1943, the number of cases of syphilis rose to over 33,000 cases — a case rate of 1,536 per 100,000 persons. But the rate started to drop the next year. During the next few years, the decrease was due to:

- * the passage of the premarital and prenatal law in 1945, which required that all persons seeking marriage licenses and expectant mothers be given blood test for the detection of syphilis;
- * the start of state-wide Rapid Treatment Centers for the treatment of syphilitic patients;
- * the introduction of penicillin as a one-treatment cure for syphilis; and
- * mass blood testing campaigns.

Because primary and secondary syphilis rates dropped to such an all-time low in the early 1950's, public health authorities felt eradication was near. The Federal Government cut back funds for the venereal disease program with the thought that state and local agencies could maintain the needed support.

However, the number of infectious syphilis cases reversed themselves and began to climb. The State Board of Health, in cooperation with the U. S. Public Health Service, started rebuilding the venereal disease program. After the disease peaked out in 1965, it took

another downward trend until the last quarter of 1970 when the number of cases started to increase.

The Division of Health estimates that through its Venereal Disease Control Program, carried on through the cooperation of the county health departments, 790 cases of infectious syphilis were prevented as the result of identifying, locating, and treating persons who were probably incubating syphilis.

Along with private and hospital laboratories, the public health laboratories have carried on the testing for syphilis over a number of years. During 1970, the Division of Health Laboratories received over 792,000 blood specimens for syphilis serology from county health departments and private physicians. Of these, over 29,000, or 3.7 per cent, were positive.

GONORRHEA

Gonorrhea, the second important venereal disease, is the most prevalent of the diseases, and the most common bacterial infections among adults. While the complications from gonorrhea are not so numerous as for syphilis, they are important because of the serious conditions that frequently result.

Gonorrhea in History

There is much evidence that gonorrhea is a disease of great antiquity. Ancient writings of the Egyptians, Hebrews, Chinese and Greeks are highly suggestive of the presence of gonorrhea. Mosaic Law (Leviticus 15) told about the management, including therapy and public health measures, to be carried out when people were confronted with a disease characterized by a discharge. This resembled gonorrhea. Sanitation procedures included the washing of bedding, clothes, furniture, and wooden dishes. After seven days of treatment, and if the patient was cured, he was to take an offering to the Lord Jehovah.

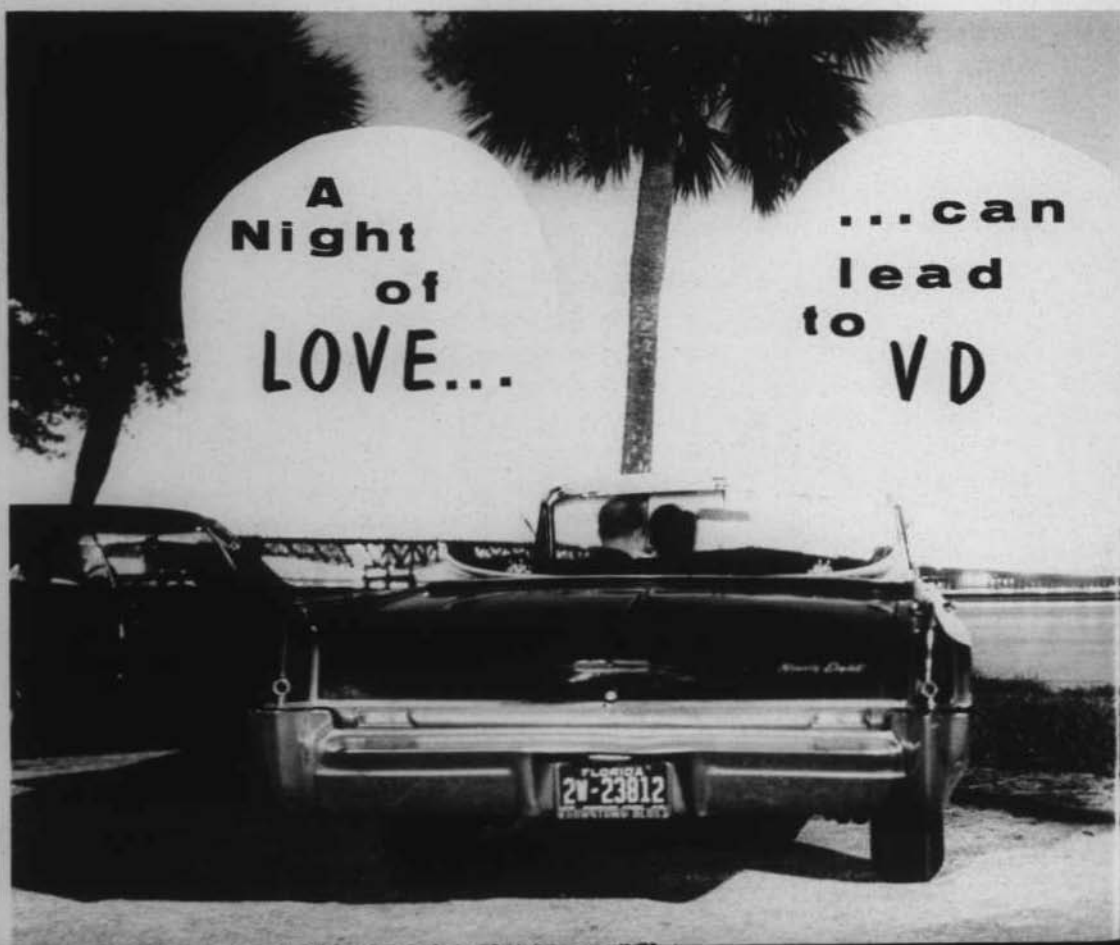
The name "gonorrhea" was coined by Calen in 130 A.D., and means a "flowing of seed," which is derived from the discharge of pus resembling a flow of semen. When syphilis swept through Western Europe during the latter 15th Century, medical men er-

roneously began to associate gonorrhea as an initial symptom of syphilis. It was not until the middle of the 19th Century that the two were again separated as different diseases.

Signs of Gonorrhea

The organism that causes this venereal disease is the gonococcus which resembles a coffee bean. Because it always occurs in pairs, it is classified as a diplococcus. As with syphilis, transmission is by sexual contact or sex play.

The disease is entirely different in males and females. The natural incubation period is from two to five days. The first sign that a man is infected is a sudden onset of frequent, painful urination which is accompanied by a burning sensation and a discharge from the urethral opening. Symptoms are usually severe enough for the patient to seek medical assistance almost immediately.



If he is not treated promptly, the infection may spread to his posterior urethra and the prostate gland. If the infection is allowed to continue, severe scarring of the urethra may occur, narrowing the opening to a point where it is impossible, or difficult, to urinate. This may lead to retention of urine, resulting in secondary infection, damage to the kidneys, and inflammation of a gland located near the testicles.

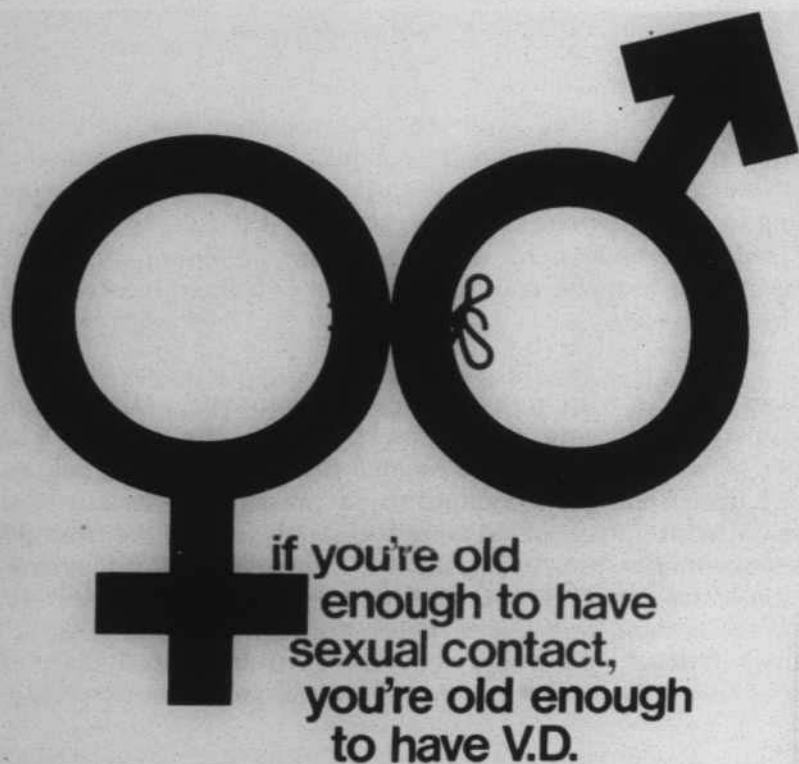
Most females with gonorrhea are asymptomatic. That is, they do not show any outward signs that they have the disease. A small number of women may have a vaginal discharge or some pain at the time of urination. These symptoms, if present, are usually ignored and the infection may spread from the glands around the urethra and vaginal opening to the deep glands of the cervix. If left untreated, it may spread to the Fallopian tubes and ovaries, causing abscesses and peritonitis—a condition called pelvic inflammatory disease. If not promptly treated, the tubes may be obstructed, and the ovaries damaged to a point that the woman becomes permanently sterile.

In both the female and male, gonorrhea may spread into the blood stream and become settled in other areas of the body, causing crippling arthritis of such joints as wrists, hands and ankles. Infection of the heart valves may cause severe damage and death.

If the mother has gonorrhea, a new born infant may have gonococcus infectious material inoculated into the eyes at the time of birth. Persistent infection may result in scarring and occlusion of the transparent portion of the eyes, leading to permanent blindness. Florida has a law that require silver nitrate drops be placed in the infant's eyes immediately after birth. This simple procedure prevents damage to the eyes.

The Pool of Infection - The Asymptomatic Females

As previously stated, women rarely show clinical signs of gonorrhea infection. They have no signs or symptoms that show they have the disease. The discharge, lower abdominal pain, or urinary symptoms that sometimes occur with gonorrhea in the female may occur also in other conditions.



The Age of Innocence is past. If you know or think you have VD, get help. If you could have VD, find out for sure. Diagnosis and/or cure is fast, inexpensive (free if necessary), painless and no one but you need ever know.

Because of this lack of symptoms, there are thousands of women in Florida who are carriers of gonorrhea. This reservoir of infectious venereal disease is growing — simply because the women do not know they have the disease and because there is no simple diagnosis and cure. There are more than 1.3 million women in Florida between the ages of 15 and 44 of whom a significant number are members of this silent carrier group.

The results of a study of women in Ft. Lauderdale, Tampa, and Jacksonville recently showed there was a significant rate of gonorrhea infection in females. Through venereal disease clinics, family planning, maternal, obstetrical-gynecological, health card, and general clinics, the Division of Health and county health departments

tested some 32,000 women in a 18-month period and discovered that about 10 per cent of them were positive for gonorrhea.

Unfortunately, many women resist the examination for gonorrhea. Many physicians are loath to do the tests when their patients do not show symptoms of illnesses that are gynecologically related. Because of the severity of the complications of pelvic inflammation in women, it is extremely important that females be screened for gonorrhea.

In 1970, the Division of Health laboratories performed over 222,000 examinations — smears and cultures for gonorrhea and found that 16 per cent of the smears, and 14.2 per cent of the cultures were positive. In the asymptomatic females, the smear technique is almost worthless in detecting gonorrhea. Cultures are the best method of detecting the disease, but they are time consuming and relatively expensive.

Why Gonorrhea is on the Increase

During the era of World War II, gonorrhea had a rate up to 795 cases for each 100,000 persons in Florida. There were over 18,000 reported cases in 1945, but the population of the state at the time was only 2.2 million. The case rate and number of reported infections dropped to their lowest points in the mid-1960's when they reached 159.5 cases per 100,000 population, and 8,867 infections. But since that time, gonorrhea has reached epidemic proportions with over 30,000 cases reported in 1971.

Reasons for the increase in gonorrhea include:

- * too many demands on the Venereal Disease Control Program of the Division of Health to combat syphilis — which is a more serious public health problem;
- * increased resistance to penicillin and other antibiotics by the gonococcus;
- * few diagnostic tools available that are effective;
- * inadequate treatment;
- * failure of epidemiology because of short incubation period and overwhelming number of cases;

- * increase in the number of asymptomatic females and males;
- * no easy way to detect the disease in females; and
- * the wide use of intrauterine devices and birth control pills.

The enormous reservoir of infected females and the fact that private physicians report a small fraction of the recorded cases make it appear that those women who are treated are replaced by many more infected ones. It is like sticking your finger into a glass of water. When you've pulled it out, you would never know by looking at the glass that your finger was even in it.

Treatment for Gonorrhea

Any talk about venereal disease, until recently, has been considered "vulgar." Within the last few years, after extensive public health campaigns, has it been discussed openly. Because of the lack of specific therapeutic drugs, the use of prophylaxis, including silver and mercury compounds and condoms, was promoted by medical and public health officials. During World Wars I and II, the control of venereal disease was important to the war efforts. Condoms were distributed widely to servicemen and defense workers. This was accompanied by well-designed, effective health education programs.

After World War II, penicillin and other antibiotics became available for the control of gonorrhea. When penicillin was first used, the recommended dosage was 200,000 units. Because the gonococcus has developed a resistance to the antibiotic, public health authorities now recommend that uncomplicated cases of gonorrhea in males be treated with 2.4 million units of penicillin in a single intramuscular injection. Female patients usually require higher doses of 4.8 million units to obtain a satisfactory cure.

Should money become available, the Division of Health is proposing that the screening of asymptomatic females by the culture method be expanded to include all women who are given any type of gynecological examination in prenatal, post-natal, family planning, and cancer detection clinics. All types of clinics are ideal for detection. The screening of the asymptomatic pool of women, and the conducting of case detection (case-finding epidemiology) can have a considerable impact on the reservoir of infected women.

VD



THE SILENT EPIDEMIC

FIGHT LOVE POLLUTION

STAMP OUT VD

Enlightening the Public

It is a fact that syphilis and gonorrhea have reached the point of being the Number One communicable disease in Florida. We have tried to point out facts that will make you, the Reader, aware of the dangers of these two venereal diseases. But too many people consider that the problem belongs to someone else. "After all", you may say, "If there are only 30,000 persons reported with gonorrhea in 1971 —



out of a population of nearly seven million — it's no concern of mine!" But the fact is that this number is only the peak of the iceberg.

However, we point out these facts with the hope that:

- * an infected person, who believes he may have a venereal disease, will voluntarily walk into a diagnostic clinic for treatment.

- * a physician will include venereal disease diagnosis as part of this practice, even though he seldom finds a case. If venereal disease is to be reduced, the private physician must cooperate by reporting his findings to the county health department.

- * your attitude about these venereal diseases will change to the point where you will demand that something be done about them.

There are demonstrations for many other diseases. Mothers collect money for poliomyelitis, cerebral palsy, and muscular dystrophy. Can you image a mothers' march for syphilis, or a teenage car wash for gonorrhea?

Venereal disease education needs "public awareness." This is the key factor to the prevention of syphilis and gonorrhea. The objectives of the Division of Health's venereal disease education program are:

- * to inform the general public about venereal disease;
- * to convince the public that it is their problem;
- * to educate the public concerning the causes and the consequences of failure to secure treatment; and
- * to enlist the public's active support for venereal disease control programs.

Professional education is needed to urge medical students, hospital residents, and practicing physicians to acquaint themselves fully with the diagnosis and treatment of venereal diseases, and then report the cases to the county health department. Florida ranks second nation-wide in the reporting by physicians, but they reported only one of every four cases of infectious syphilis cases recorded, and even less proportion of the gonorrhea cases.

The Division of Health has carried on an active educational program through the school systems of 44 counties. Because of the increasing problems with venereal disease in schools, the subject has been introduced into the curriculum of these school districts. A total of 78 county-wide teachers training workshops have been conducted since 1966; some 225,000 junior and senior high school students have received venereal disease instruction.

Special workshops were also conducted for personnel and staffs in three state correctional institutions. A venereal disease awareness committee was formed in Dade County in November 1971; and January 1972 was designated as State-Wide Venereal Disease Awareness Month by Governor Rubin Askew. The Division of Health and the Florida Pharmaceutical Association cooperated on the project.

The objectives were to inform Florida citizens about venereal disease through a mass communication media (radio, newspapers, posters, and billboard) campaign.

The Division of Health, through its audio-visual library distributed motion picture films for the education of Florida citizens, school children, and visitors. These were viewed by some 700,000 persons during 1970.

The Silent Epidemic

For centuries, venereal diseases have been treated by earthlings as payment by the gods for offenses against them. Even today, they are not viewed as something to be accepted and treated. The "hip" generation wants the freedom to practice sexual relations openly, but it hesitates to bring venereal disease out of the closet in which it is hidden. Homosexuals do not seek medical attention for fear of being revealed. Promiscuous people sometimes are reluctant to reveal their sex contacts by name if they know the investigator will approach the contacts. The Venereal Disease Control Program stresses to every individual that the information given is kept in strict confidence.

Florida for many years had the dubious honor of ranking first in the nation in the rate of venereal disease cases. The state has now dropped to fourth place but sex-related diseases remain a serious problem in the urban centers. South Florida, for example, has one of the most challenging potpourri of patients anywhere in the nation — blacks, Cubans, whites — heterosexuals and homosexuals of all social levels — streetwalking prostitutes, and heroin addicts.

The Division of Health is determined to bring venereal disease out of the closet into the open — to make the silent epidemic look like a roaring lion and then tame it for the protection of the community. Until people recognize the importance of venereal diseases, talk about them, refuse to accept them as a normal part of life, and seek medical help, the current epidemic will continue to flourish.

Only when the people of Florida decide that they want to rid the state of syphilis and gonorrhea, and join forces with the Division of Health, will the silent epidemic be eliminated.

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FLORIDA HEALTH NOTES



VOLUME 64 — NO. 4

APRIL 1972

Planning Your Family

A Second Class Publication

FLORIDA STATE LIBRARY



FUTURE GENERATION (Cover Photo) — What kind of world will these babies who are born in 1972 have when they reach adulthood? Family planning can give them a less crowded world.

TENDER LOVING CARE — The needs of this baby are fulfilled by his parents. Evidence is shown that he is a welcomed infant.

Planning Your Family

What kind of life would you like to give your family? What kind of world would you like to leave to your descendants?

Can you imagine a planet so crowded that there will be standing room only? Perhaps life would be regimented. Every one would live in high-rise apartments that would stand shoulder to shoulder against the sky with little open space between.

Perhaps you could leave your apartment only every other day — giving others a chance to get outdoors. You would own no automobile. There would be few or no recreational areas — no forests, no Everglades, no wild animals or places for them to live — except in a zoo. No one really knows what it will be like, but if the present rate of growth continues, there will be six billion people on earth by the year 2000. By 2040, the population will double; by 2070 (98 years from now), the planet could have a population of 25 billion persons. Even now, the world adds another population the size of the United States every three years.

Can you imagine a life in which you could have no privacy? There would be no place to get away from the maddening throng. Already the world is becoming crowded. Only land that is mountainous, desert or otherwise unsuitable for habitation is vacant.

Even in the less densely inhabited regions, open spaces are shrinking. Nature is being deposed in the name of progress. Wild life is being exterminated; forests cut down; mountains gashed by hydroelectric projects; wildernesses plastered with mine shafts and tourist camps; fields, meadows, and swamps (including the Everglades) are stripped for highways and airports.

The population pressure is being translated into non-productive goods that flood to every corner of the globe, replacing native cultures and destroying traditional arts and crafts. Even the natives of far off jungles are being photographed in loin cloths and wrist watches.

Perhaps you have already felt some of the crowding. Perhaps you have been caught in the 30-mile-plus traffic jams that occur on Interstate 4 when tens of thousands of people try to crowd into Walt Disney World on holidays. Have you ever been turned away from a state or national park's camping area because it was full?

What quality of life will future generations have if we do not do something about the growth of the human family on earth? NOW is the time to do something about the population growth and the place to start is in the individual home.

This issue of *Florida Health Notes* will tell you about the growth of the human family over the centuries, the problems that will develop if the rate of increase is not slowed, and of families who had, or did not have, a baby by choice. We will discuss the reproduction process, the means of child spacing, problems of the pregnant school girl, and the family planning program of the Division of Health.

A Baby Born Every Second

Do you remember how compound interest works? Perhaps you can recall from your school days. Take 50 couples, for example. If they have an average of 1.7 children per couple, they would have 85 children. Suppose these children grow up and marry other people; they would have 145 children. If the same rate continues, the 50 couples would end up with 245 great-grandchildren.

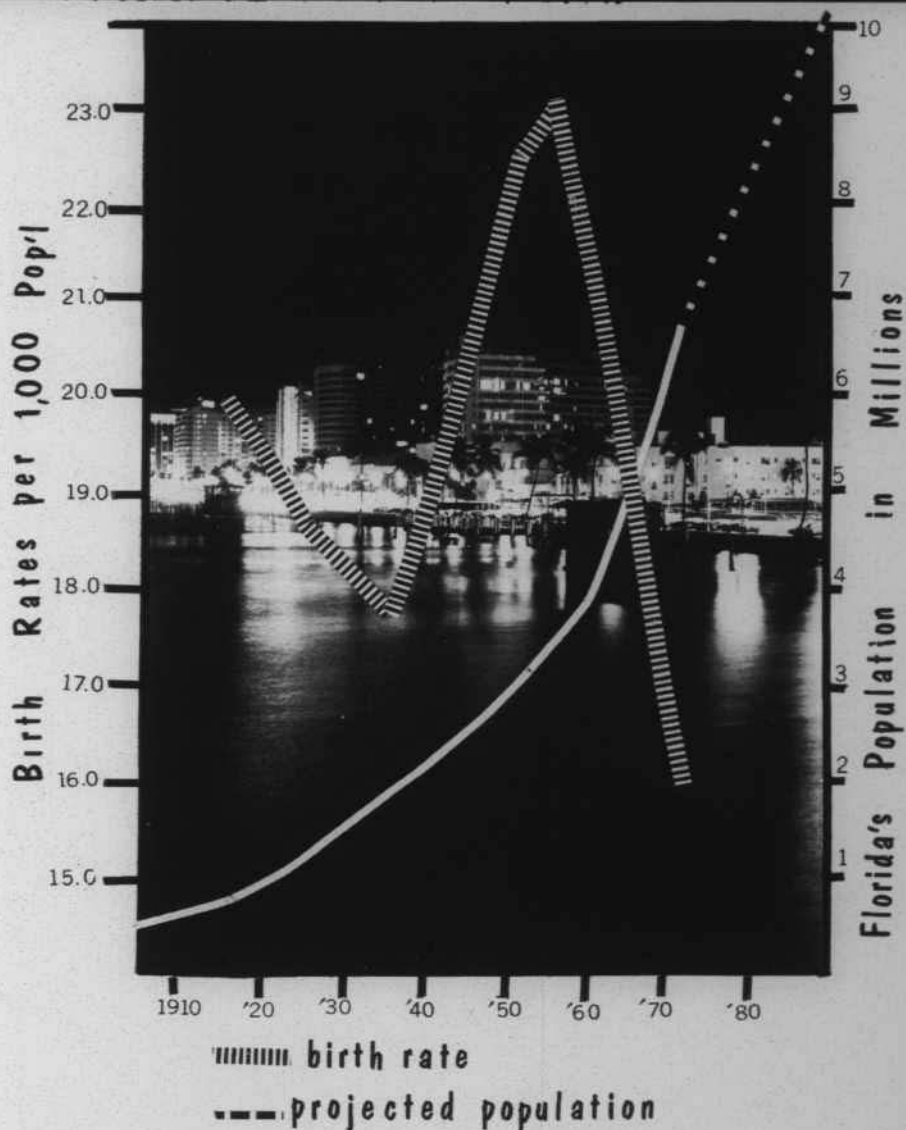
It is easy to see how the three billion people on earth can add nearly 34 million a year when there is a birth rate of 34 babies for each 1,000 persons and a death rate of only 15 per 1,000. There are nearly 4,000 births an hour, or an average of a new baby born each second. Although Florida's birth rate is falling, in 1970 there was a child born in the state on the average of every five minutes. The growth of the human population started slowly. But it has accelerated very rapidly in recent years until it is now an explosive process . . . despite a falling birth rate in the United States and the industrial countries.

FLORIDA HEALTH NOTES

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APRIL, 1972



POPULATION UP: BIRTH RATE DOWN — Florida's population has climbed to nearly seven million in the past six decades. It is projected to go even higher. The birth rate, however, dropped before World War II; then it rose sharply. Now it is declining again.

Before the discovery of agriculture — about 6000 B.C. — the total population of the world was probably less than 20 million. It probably passed the 100 million mark about 2600 B.C. — the time of the Old Kingdom in Egypt. The 500 million mark was passed during the middle of the 17th Century; in the mid-19th Century, the world

population totaled one billion; it doubled itself by the 1920's; and by 1975, it will have reached four billions.

The present population is distributed unevenly over the land surface of the earth. Two-thirds of the world's people live on seven per cent of the land area. The most densely populated areas are Eastern and South Central Asia, Europe, and the eastern portion of the United States.

The undeveloped, or emerging areas, of the world — Africa, Southern and Eastern Asia, and Central and South America — have the highest birth rates. The industrial nations have decreasing birth rates, but modern medicine and technology have extended the life span of man to approximately 70 years.

Despite the exploding world population, only 25 of the 102 developing nations have official policies to promote birth control; 17 nations give support, but have no official position; and 60 nations have taken no official stand and give little or no support. The United States has contributed to the economic development of these countries, helped cut their death rates, lengthened the life span of the natives; but has not helped to control the expanding populations.

During the colonial days, the United States had an agrarian society that demanded large families. From 1850 to 1900 the rate of growth was 4.6 per cent each year; from 1950 to 1970, the rate of growth has dropped to 1.7 per year, but at this rate the 200 million people of the United States are adding another 3.4 million annually.

Florida's social, economic, health and governmental problems have been compounded by its growing population. In 1910, it was sparsely settled with only 753,000 persons. By 1965, there were some 5.8 million; in 1970, an estimated 6.8 million; and by 1980, there probably will be eight million people, and close to 13 million by the year 2000.

Florida now has some areas with low population density but these are rapidly filling up. Seventy per cent of the 6.8 million persons live in 11 counties which are already congested. These include the Gold Coast (Dade, Broward and Palm Beach Counties); Central Florida (Polk, Orange, Brevard, and Volusia); and Central Gulf Coast (Pinellas and Hillsborough), and Duval and Escambia Counties. Already suburban areas in these counties are spreading further and further from the urban centers.

The booming growth has made Florida the ninth most populous state in the nation. This spiraling population has increased the costs of operations of all levels of government. It means dwindling water supplies, urban congestion and growing slums. It means higher taxes for schools, roads, fire stations and pollution control.

Bigger and Better - An Unstable Population

The idea of "Bigger and Better" is a part of the fabric of our society. People believe that growth stands for youth, that cessation of growth means old age. A population that has ceased to grow is considered weak, unprogressive, lacking in vigor. Everyone seems reluctant to grow old. And although the United States will soon observe its 200th birthday, we resist thinking of our nation as ancient.

Business thrives on growth; home builders, appliance dealers, contractors, textile manufacturers, food processors all have a vested interest in an expanding population.

All nations are committed to achieving a higher standard of living. Adequate food, good health, literacy, education, and gainful employment are the goals of millions. But in Florida, the United States, and the world, the current rate of population growth is an important barrier to the achievement of these goals.

But an expanding population leads to an unstable population. This can lead to food shortages — already two out of three families in the world are undernourished. Seven per cent have less to eat each year. Crowded populations result in higher crime rates because hungry people resort to violence in order to eat. Soon they accept a policy of violence that ends in anarchy.

Overpopulation cuts down on land that is available. Unstable populations tend to migrate. One out of five persons in the United States move every year. One out of 15 moves to another county or state. During the past decade, Florida added an average of 15,300 persons to its population each month. Natural increase — the difference between births and deaths — accounted for about 27 per cent of the increase. The remaining increase of 73 per cent was the result of in-migration. About 11,200 persons a month came from other states to establish residence in Florida.

Overpopulation increases the demands for education and careers. New classrooms and schools are added each year to meet the demands. Already many school districts — despite the high tax rates — have had to go on double sessions to insure some education for all the children. Colleges and universities find more students seeking admission. Today's best positions demand high qualifications. School and college dropouts and unskilled laborers find it increasingly hard to obtain employment.

Social Factors of Overpopulation

Nearly everyone from the city to country village is in favor of limiting the size of families — especially after the third or fourth child. The major single reason is the economic welfare of the family — a better standard of living, and a better chance in life for all the children.

Birth rates can be lowered by any one of a variety of practices:

- * late marriages or not marrying at all — as in Ireland;
- * by induced abortions — as in Japan and many Eastern European countries; and
- * by contraception — as in all Western countries.

URBAN CONGESTION — Florida already has crowded urban areas with high population densities.



In India, which has one of the highest birth rates in the world, many children marry at a very young age. But an increase of five years in the marrying age could result in a decline of about 20 per cent in the birth rate. However, marriage practices of a society are closely bound up with its social and cultural institutions. These are not easily changed.

There are many basic elements that affect human behavior: cultural institutions, religious teachings, economic arrangements, family organization, and sexual practices. All of these are involved in the family's attitude, sexual practices, and the number of children it will have. Any change in the family's practice must overcome a wide range of beliefs. It is also difficult for legislators and governmental leaders to fight the ghosts of old morals, ideology, and religious teachings that oppose family planning.

Information on child spacing is usually common among the more educated and affluent people. It is usually sparse, incomplete, or erroneous among the poorer people.

In colonial America, large families were necessary to operate the agricultural society. There was a desire for sons for status, economic reasons, and to maintain the family line. Today's industrial society does not need large families. Where the customary male dominance once confined women to the care of the home and children, the modern woman is finding freedom outside the domicile. But the population continues to expand at a too fast a pace.

A Child By Choice

At no time should a child be conceived irresponsibly. Sex relations enjoyed by a man and woman may result in children. But no child should be born unwanted and unloved. No infant should be denied the birthright of a home, enough to eat, good health, clothes to wear, and the opportunities of a full life.

Parents can avoid unwanted children by family planning. (It is also called child spacing or birth control.) They can seek ways of avoiding pregnancies — the same as they can seek help for venereal disease, cancer and maternal care. Through family planning, children can receive a fair share of their parents' love and attention.



COMFORTABLE HOME — Family planning gives the Jones family a life full of joy and happiness. The father's income is adequate for all of the members of the family.

John and Mary Jones are happy that they are having their third child. They already have Tim, who is 10 years old, and Sue, who is five. Now that John has received a promotion in the company and they are financially situated, they have decided to have a third child.

The Jones have planned their family since their marriage. They wanted three children — when they could financially support them. They waited three years after their marriage before they had their first one. From time to time, they used various forms of contraceptives — the oral contraceptive, the condom; now Mary is using an intrauterine device. She takes the responsibility for the contraception and in this way she and her husband can enjoy their relationship without tension.

The family enjoys their comfortable home and living together. They take pleasure in their holidays and vacations with trips to the beach, the mountains, museums and art galleries..

The Smith family is similar to the Jones in that they, too, are expecting a baby, but they are different in other ways. Roger and Joan Smith have been married five years and have five children. The oldest is an illegitimate son — age seven, who was born when Joan was a teenager. There are also two boys, five years and seven months; and two girls, three and two years.

The Smiths live in an old house near a slum neighborhood, next to the railroad track. Roger has had a number of unskilled and semi-skilled jobs over the years. At times the family has received family assistance from the welfare department.

Before she was married, Joan had no sex education. She didn't know that there were such things as contraceptives until her second baby was born. A nurse told her about the diaphragm and the safe period for intercourse. She used them for a short time; but her husband did not like it.

He wanted a lot of children and he wouldn't try to keep from having them. He felt that family limitation was strictly up to his wife, but Joan was too confused and deflated by Roger's attitude to take the initiative of preventing the babies. She was also worn out from child bearing, did not try to keep a clean house. Her time was occupied by the boy in the second grade, and the four children at home — of whom two were in diapers.

Roger at first enjoyed the kidding he got about the new babies, but now the kidding was wearing thin. The family was in conflict. Joan was feeling desperately the need to limit her family. Roger refused to face the realities of the situation.

Where the Jones were happy to have their third child because they had planned for it, the Smiths were faced with the unhappy prospects of having a sixth child whom they could not support.

The Smiths at times barely had enough to eat. They never took vacations and had never seen the inside of a museum or art gallery. They saw on television the possessions of the more affluent and they wanted such possessions, too. Whenever Roger had a good paycheck,

HOME OF DESPAIR — The Smiths, who did not plan their family, have less in life and more conflict and unhappiness.



he would buy extravagant things, and before they knew it their money would be gone.

Accepting the Family's Responsibility

Both John and Mary Jones accept their responsibility for creating and raising their children. Mary is able to persuade her husband to moderate his sexual interests because she focused the contraceptive issue around her health. She is pleased at her husband's consideration and solicitude. John believes in contraception. He doesn't believe that a woman should have too many children, too close together.

On the other hand, Roger Smith tries to take the easiest way out — by doing nothing. He wants a big family. He is not a worrier; he feels things will work out by themselves. He says, "Let nature take its course." He feels a man should be a good lover, a good father, and should have things very much the way he wants them. Despite the times that he is out of work, he feels his job instability is something not really his fault.

Joan Smith wants to try contraceptives, but knows her husband does not approve of them. She does not want any more children, but cannot prevent them. For his part, Roger is not able to reconcile his own desires for unobstructed pleasure with his wife's concern about pregnancy.

Overpopulation—Mass Suicide

A question raised by some people who are concerned about the growth of the world's population is: Will overpopulation lead to the extermination of the human race?

The lemming, a rodent native to Norway, is an example of what overpopulation can do. These rodents normally live secluded lives. But every three or four years the population grows to such proportions that the lemmings become aggressive and begin a mass migration. As they travel across the country, they destroy crops, buildings and vegetation in their path. The migration ends at the sea where they swim away from land and drown.

The Beginning of Life

The birds and the bees have served parents for generations as a means of telling their children about the birth process. Scientific phrases have replaced the sentimental and folksy word-pictures, but people's level of understanding is still the same. It is difficult to grasp what you cannot see; and for many people the method of conception remains a mystery. Some people, particularly the less knowledgeable, do not think about conception and how it comes about. For them, the baby that results is simply a natural consequence of intercourse.

To understand birth control, it is necessary to understand the process that leads to conception of a baby — the union of the male's sperm and the female's egg.

The man's sperm is produced in two sex glands (testes) located in the sac-like scrotum. There are some 400 million sperms in a teaspoonful of male fluid (semen). Each sperm has a head propelled by a swift-lashing tail.

The woman usually develops and releases one egg a month from one of her two ovaries. The egg moves down into the Fallopian tubes and then into the uterus. This process occurs about 14 days before each menstrual period.

During sexual intercourse, the man deposits about a teaspoon of semen in the woman's vagina. Millions of sperms seem to be required to penetrate the womb and some move beyond the womb into the Fallopian tubes. Once there, the sperm has the power to fertilize the egg for as long as 72 hours — should one be present.

Should the egg pass through the Fallopian tubes and the uterus without being fertilized, it will die and disappear. Should it be united with a male sperm, certain female hormones prompt the lining of the uterus to form new tissues to receive and nurture the egg.

Because of the sequence of events, a woman can usually conceive only during a limited time — about half way through her menstrual cycle. The fertile period consists of the days before ovulation during which the male sperm can survive in the tubes, plus the 24 hours or so the egg cell is active. This period varies from woman to woman; and in the same woman, from month to month.

Controlling the Population Growth

The most accessible means of fertility — or family-regulation (family planning) is the contraceptive. Induced abortion is widely and legally practiced in some countries and in some of the United States; but it is widely and illegally practiced in many others.

There has never been a time when human parents — the more intelligent of them at least — were not trying to control the size of their families. Primitive parents have groped for centuries toward higher ideals of family life. They have wished to limit their offsprings to a number that is in accordance with the best standards of their tribe and time. These parents were hampered by their ignorance. It was this same ignorance that kept barren couples from realizing their plans for parenthood. From time immemorial, the wife has been blamed for the shame and disgrace of a childless marriage — regardless of the sterility or fertility of her husband.

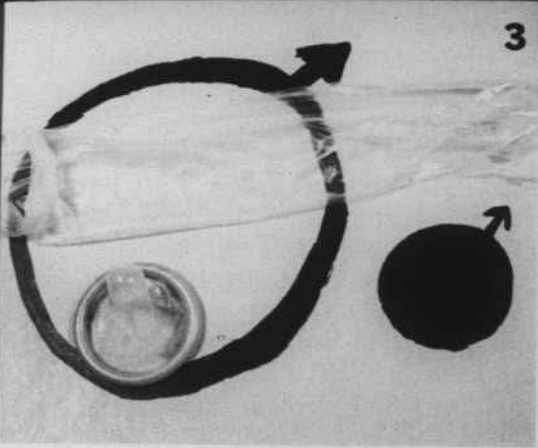
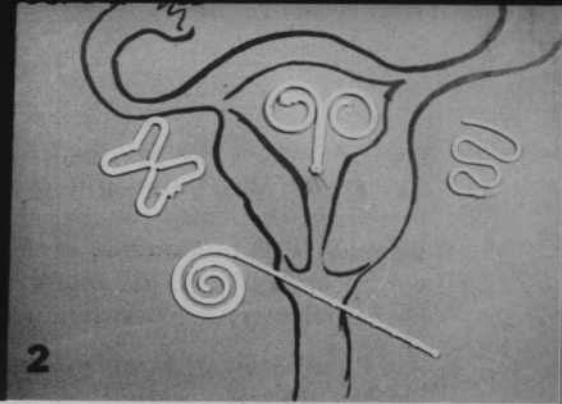
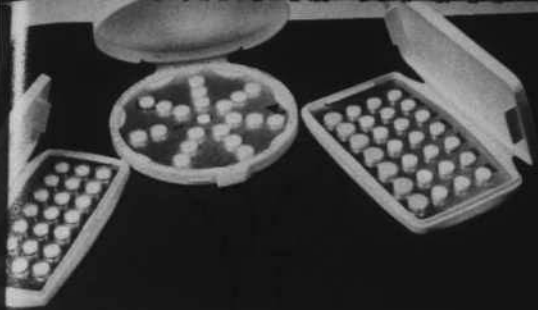
Where there were children born to primitive tribes — and some civilized groups, as well — the crippled and sickly babies were killed. In some societies, girls and unwanted boys were strangled or smothered at birth if the number of offsprings already born to the parents had reached the limit for their class, resources, or desires.

The notion that it might be possible to prevent conception, rather than kill the fruit of sexual relations, occurred to the Egyptians. The oldest known prescription for a contraceptive is found in a papyrus which was written about 1850 B.C. The method suggested is quite similar to some of those widely used today.

Methods of Preventing Pregnancy

There are several methods of contraceptives to prevent pregnancy. Most man-made contraceptives set up a mechanical or chemical barrier to block the union of the sperm and egg cell.

* **ORAL CONTRACEPTIVE** — The effective method of contraceptive used today is the oral one — known as the pill. This method has a estrogen-progestin compound that restrains the ovulation so that no egg is present to meet the sperm. It is available only on a prescription and should be taken only under a physician's direction.



CONTRACEPTIVES — The more widely used contraceptives today include (1) the oral contraceptive, known as the pill; (2) intrauterine devices (shown against a drawing of a uterus, but not in proper position); and (3) the condom — the contraceptive used by males.

Normally, when a fertilized egg is settled in the lining of the uterus (womb) and begins to grow, additional eggs will not descend into the uterus to compete in varying stages with the development of the first egg. The woman's ovaries send a message to the brain to stop sending out hormones to trigger the egg-cell production. These messengers are two other hormones — progesterone and estrogen.

The contraceptive pills mimic the action of these two natural hormones and signal the brain's portion that stimulates the egg production to stop. The pills are able to do this with tiny amounts of synthetic hormones that resemble the original ones.

Although the oral contraceptives have been improved since they were first introduced, physicians do not prescribe them for women with certain medical conditions. These include suspected or known liver trouble, kidney disorders, hypertension, and a history of illnesses, such as breast or uterine cancer and blood clots. Although the

pill is considered safer than pregnancy it may result in side effects similar to the physical reaction experienced during pregnancy. Reaction that may be experienced are breast tenderness, upset stomach, weight gain and occasional spotting. If you are taking oral contraceptives, it is necessary to stay on a regular schedule. If you have difficulty, it is best to contact your physician.

Pharmacies in Florida carry a wide variety of contraceptives for women. But it is wise to consult your private physician, or county health department doctor, before buying one. He can explain how to use it correctly.

* **INTRAUTERINE DEVICES (IUD's)** — These are the second most effectively used form of birth control. They are made of various materials — silkworm gut, stainless steel, and plastic. They come in different sizes and shapes — coils, rings and loops. These are inserted in the uterus by a physician. It is not known just how they work, but it is thought they prevent the nesting of the fertilized egg in the walls of the uterus.

* **DIAPHRAGM AND CERVICAL CAPS** — These are shallow cups of flexible rubber that are placed in the vagina in such a way as to cover the entrance (cervix) of the uterus. They must be fitted by a physician. They may be lubricated before insertion with a chemical cream or gel which acts as a barrier and immobilizes the sperm. The main drawback with the cervical cap is that many women find it difficult to master the technique of capping the cervix which lies deep in the vagina. The diaphragm, however, does not pose this problem and when fitted properly and used correctly, is found to be very successful by many women.

* **GELS, CREAMS AND AEROSOL FOAMS** — These are simple contraceptives that are used without devices. To act alone, the substance must be a powerful sperm-killing material and must spread a fairly long-lasting film over the surface of the cervix. They are very unreliable unless used in conjunction with the condom or diaphragm.

* **VAGINAL TABLETS AND SUPPOSITORIES** — These are chemical contraceptives which, when moistened and inserted, distribute a thick, sperm-killing foam that blocks the cervix, creating a chemical barrier. These are also unreliable.

* **CONDOM** — This is a contraceptive used by men as a birth control measure. Made of thin, strong rubber or latex, it fits over the

male's organ (penis) and provides a high degree of safety against pregnancy and venereal disease. When used together with gels, creams or foams by the woman, it is highly effective.

Other Methods - Rhythm and Withdrawal

There are other methods which do not use chemical or mechanical means to prevent pregnancies.

The rhythm method is the only method of birth control approved by some religious groups. It is based on the fact that a woman can become pregnant only during that time of the menstrual cycle when the egg is released from the ovary — usually 12 to 16 days before her menstrual period. To avoid conceiving, she and her husband should abstain from sexual relations, not only during this fertile period, but for three or four days before and afterwards to insure against error. One problem is that the menstrual cycles may be irregular. Because of this, the rhythm method is unreliable for many women.

The withdrawal (coitus interruptus) method calls for self-control on the part of the male partner. During the sexual act, the man must withdraw himself from the woman's vagina just before reaching his climax. This system may be ineffective because of the dangers of the man's semen being injected into the birth canal despite the care taken by both partners.

The vaginal douche is not a means of birth control — although many people believe it is. The method consists of washing out the birth canal with a solution of one kind or another in hopes of removing the sperm. But the sperm are already in the uterus and indeed may be forced more rapidly on their way. Products frequently sold as aids to "feminine hygiene" do not give the desired protection and will not prevent pregnancy.

Sterilization

Millions of couples in the United States use effective birth control methods to delay or prevent pregnancy and space their children. Once they are sure they have as many children as they

want, many look for surer, easier ways to avoid accidental pregnancies. Sterilization is one certain way. However, the operation at present should be considered permanent.

Men can have an operation called "vasectomy." This is a simple 15 to 30 minute operation performed under local anesthetic in a physician's office, clinic or hospital. The physician merely closes the tiny tubes through which the sperm (male seeds) travel. When the tubes are blocked, the sperm cannot enter the man's semen that is released during sexual climax. Because it lacks sperm, the semen cannot cause pregnancy. This in no way interferes with his sexual ability or pleasure.

Vasectomy has been accepted by the more educated groups, but the less knowledgeable males fear the loss of their fertility will make them lose their manliness or virility.

There are several clinics and hospitals in Florida that perform the vasectomy operation. People can contact their county health departments for additional information.

Sterilization for women is called "tubal ligation." In this operation the tiny tubes through which the egg passes each month to the womb are cut and/or tied. Thus no egg can pass into the womb to meet the male sperm. Although the operation is safe and commonly performed, tubal ligation usually requires a few days stay in the hospital. Improved techniques require shortened hospital care. A new technique called "laparoscopy" has greatly simplified the operation and has cut down considerably the length of hospital stay.

The operation has no adverse effect on women. Feminine attractiveness continues as before. Although the tubes are tied off menstrual periods and the age when menopause starts are not affected.

A Real-Live Baby Instead of a Doll

What would you do if your daughter were 15 years old pregnant and unwed? Would there be much wringing of hands, pointing of fingers, concern about "what people think."

Illegitimate births are not uncommon in Florida. Of the 115,113 babies born in Florida in 1970, over 17,200 were illegitimate. Of these, 7,300 were born to girls who were 18-years-old and under.

And the number of teenage pregnancies is growing annually. In one school year, junior high schools in one Florida county had eight girls who bore their third illegitimate child; three who became mothers for the fourth time. One elementary school girl was carrying her fourth child.

Not only is the pregnant school girl less likely to have proper medical care than the married older woman — she may become lost to society. All girls, married or unmarried, white or of the minority groups, are high educational, medical and social risks. The girls become social neglects. Many of the girls who drop out of school are pregnant and they never return to finish their education. The personal tragedy from youthful irresponsibility and an unwanted pregnancy is difficult to bear. But our society compounds the tragedy by condemning and ostracizing the young, unmarried girl. Many do not seek medical care until late in the pregnancy — if at all. Mostly, their lives will be marked with discouragement and apathy.

Because they do not finish their education, they have no way of earning a living. They frequently become welfare charges and receive Aid for Dependent Children for their babies. In some cases, the girls themselves are classified as children.

The younger the girl, the more of a problem she is to society. She is not fully matured; she is likely to have medical and psychological complications with her pregnancy. In most cases of teenage pregnancy, the girls are not ready for motherhood; nor are their boyfriends ready for fatherhood. They are likely children who wish to enjoy their fleeting childhoods, continuing to skip rope, play with dolls, and games. But now they are mothers (or fathers) with real-live babies instead of dolls. Responsible parenthood does not automatically ensue with the birth of a baby.

And what about the chances for healthy growth and development of such a baby? Might not the tragic cycle of events be repeated and repeated?



1



Schools for Pregnant Teenagers

For many years, Florida school boards had a firm policy: If a girl becomes pregnant, she must leave school and never return. The state now has a law that pregnant school girls must be provided with continuing education. However many Florida schools are not prepared to provide this education. Few teachers are equipped to handle the situations with which they are confronted. It is not part of their training.

There is also the problem of the pregnant school girl being able to continue in a regular school. If she is sick too many days, she cannot keep up with her classmates. As she advances in her pregnancy, she frequently cannot keep up with the regular activities of her school. Often she is not accepted by other students and teachers. Too often she is ignored or verbally abused.

Some Florida counties have provided special schools for the education of pregnant school girls. These schools are located in Broward, Brevard, Dade, Orange, Sarasota, Leon and Palm Beach Counties, and the City of Jacksonville. They are financed by funds from the school systems, donations and/or federal money; and



SCHOOLS FOR PREGNANT TEENAGERS — Several schools for pregnant school girls are located in Florida. This one is operated by the Service Project for Young Parents, Inc., in Jacksonville, where among other subjects, the girls (1) are taught about the birth process, and (2) how to type. They are also seen in a clinic (3) by a public health nurse.

operated with the cooperation of the boards of education, county health departments, Division of Health, church groups, social and welfare agencies. Frequently classes are conducted in church buildings, club houses, former school buildings and business or store buildings — most generally away from the regular school system.

The aims are

- * to keep the girls from becoming dropouts from the educational pattern;
- * to improve the pregnancy outcome for both the mother and baby by providing medical care;
- * to help make the girl a productive member of society;
- * to reduce the number of illegitimacies;

* to rehabilitate the girl and obtain the cooperation of her parents; and

* to generate community awareness and public opinion favorable to the situation.

Classes are small, usually 15 girls to a teacher. In addition to required class work, the students are taught typing, remedial reading, reinforced home economics, arts and crafts, some type of business training, such as cashier's training. They are also given instruction in the health care of themselves and infants, and other subjects which they might not receive in regular schools.

Women's clubs, church groups and individual volunteers help supply equipment for the classrooms and nurseries. In one school (Service Project for Young Parents, Inc., in Jacksonville), a cash register company donated machines so the students could learn to be cashiers. Public health nurses conduct clinics for the girls and advise them on how to care for themselves. Nutritionists, from the county health departments and Division of Health advise the students on proper foods.

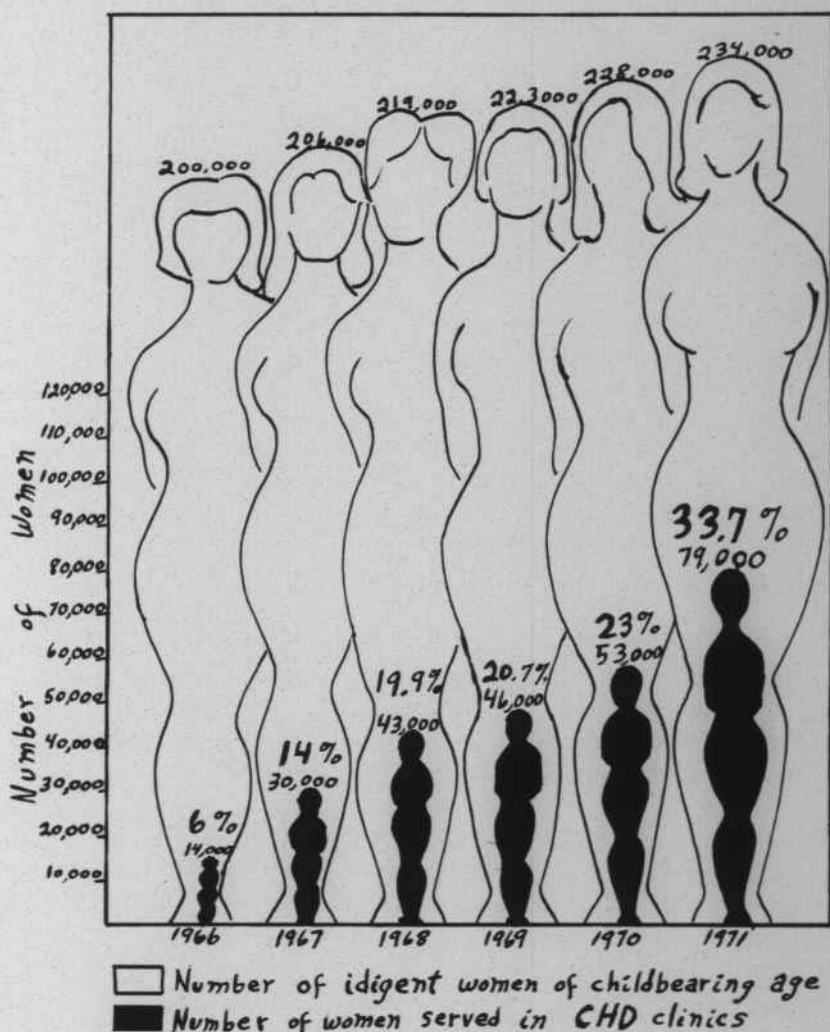
Another objective of the schools is to reach the parents, younger brothers and sisters, and young men who need sex education so that future illegitimate pregnancies may be prevented.

Family Planning Programs in Florida

Family planning services are on the move in Florida. The Division of Health and county health departments have been active in the field of child spacing for a number of years as part of their professional responsibilities to improve the health and well-being of the citizens of Florida.

During 1971, 79,037 women were seen in child spacing clinics. This is an increase of 25,153, or 31.8 percent, over those who received service in 1970. The total is about 33.7 percent of the 234,529 indigent women of child-bearing age in Florida. Jefferson, Hendry, Glades, and Gulf County Health Departments, and the City of Jacksonville Health Department reached over 75 percent of the indigent women in their areas. Florida ranks among the leaders of the United States in the number of women served.

Growth of Family Planning Programs of the Division of Health and County Health Departments



This chart shows how the family planning programs in Florida have grown from serving 14,000 women in 1966 to more than 79,000 in 1971. These women are represented by the smaller figures. The larger figures depict the total number of indigent women in Florida of childbearing age.

This significant increase is in line with the Division of Health's overall objectives to reach and provide family planning services to all of Florida's indigent women.

The Division of Health, to the extent of its funds, assists the county health departments in further developing their family planning programs. The state health agency assists the local health departments by supplying fees for clinicians and nurses, and in some instances — clerical assistance. Also included are payments for pap smears and family planning supplies — contraceptives and literature. However, most of the financing has been with federal money. There is also considerable help available to the local health agencies in the areas of medical, nursing, and health education consultation — valuable assets to any maternal or family planning program.

In some areas of the state, the staffing of family planning clinics is a problem because of the shortage of physicians and obstetrical nurses. The problem is further complicated in some counties, particularly in the Northwestern region of the state by the fact that private physicians will not admit obstetrical patients to their practices. In addition, rural areas are handicapped by the lack of transportation for indigent patients. Sometimes patients show an initial interest in child spacing, but lose interest and discontinue the use of contraceptives.

Studies have shown that a small coil intrauterine device has been successful with younger girls. The oral contraceptives create a problem with these girls because the estrogen chemical may interfere with their growth. There is also a problem of less motivated girls failing to remember to take their pill.

Many family planning services are given in county health department clinics or county hospital clinics. Sound medical practices are followed with a thorough physical examination, determination of the patient's preference about the contraceptive to be used, breast examination, and a series of cervical smears to rule out the presence of cervical cancer. The woman on any kind of contraceptive makes routine visits to her physician or health department clinic. There are several private agencies in Florida affiliated with Planned Parenthood-World Population or federally funded programs that are also interested in family planning. Some of these work with county health departments by supplying contraceptives and/or operating birth control clinics.

Every woman who is seen in maternity clinics in county health departments is given an opportunity to participate in child spacing. The service is provided for women who cannot pay, as well as the patient who can make a small contribution, but cannot afford the cost of private care.

Every effort is made to involve the husband in family planning and to have the couple agree on the method of contraceptive. The woman is interviewed by a public health nurse and attends classes in family planning prior to her physical examination. The Division of Family Services of the Department of Health and Rehabilitative Services has a policy that recipients of public assistance can be referred to county health department clinics or private physicians for family planning services.

Planning Your Family

Demographers (those who work with statistics of births, deaths, marriages, and divorces) do not agree on how fast the populations of Florida, the United States, and the world are growing. Some say if American women have two children instead of the normal three during the 1970's, there will be some 50 million fewer Americans during the next 28 years. Accordingly, the declining birth rate may mean empty classrooms in the future.

Regardless of the declining rate of growth and the falling birth rate, the living areas of the world are already so crowded that psychological, environmental, and health problems are building up. People are not just the cause of the population explosion, they are also the victims.

Millions of people today are limiting their children to those they can support. No child should be brought into the world unwanted and unloved. There are reasons for having a baby. He should not be just the natural result of sexual relations. It is wrong to have a baby

- * because of pressure from parents and friends;
- * to patch up a marriage;
- * as a tax deduction; or
- * to seek revenge against your mate.

The RIGHT REASON to have a baby: WHEN YOU REALLY WANT ONE!

The freedom to choose to bear or not to bear a child lies with each couple. But there are also responsibilities to care for each child who is born. Contraceptions should not be used as an excuse for careless, immature, or improper sexual intercourse.

Family planning should be a part of every couple's life together. The family planning programs of the Division of Health and the county health departments are able to provide child spacing services for those who need it. Private physicians are available for those who are able to seek private medical care. You can give your children the necessities of life, happiness, love and a full life if you start planning your family now.

STREET OF NEW HOMES — Florida's expanding population means that new homes are needed every year. Such growth can lead to an unstable population and shortages of food, jobs and classrooms.



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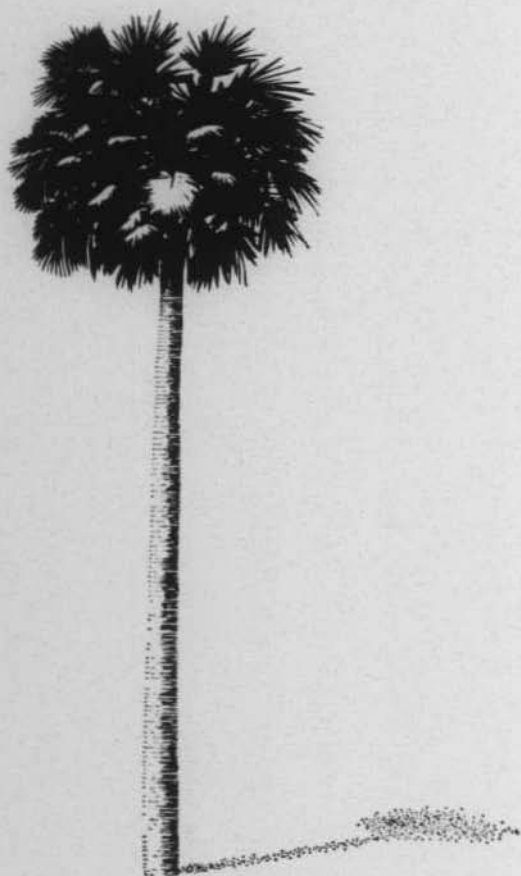
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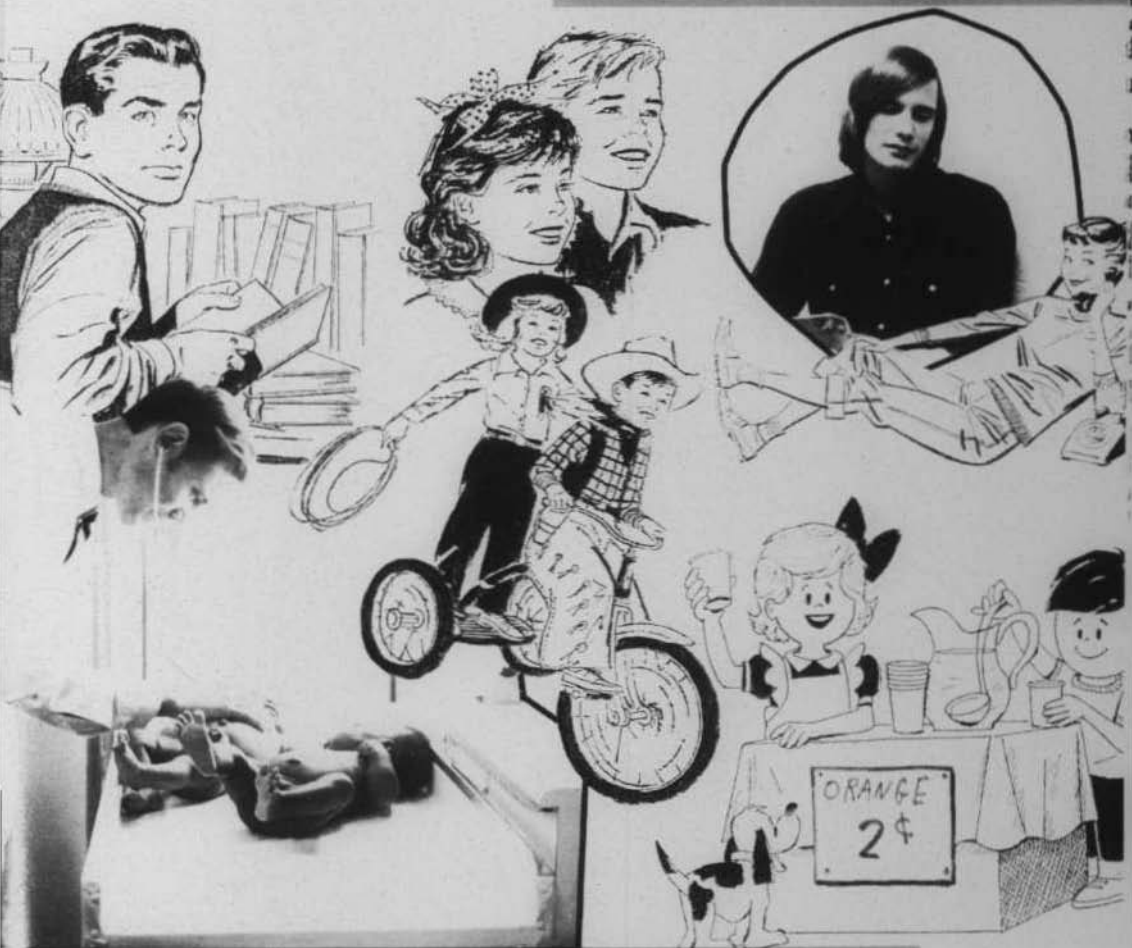
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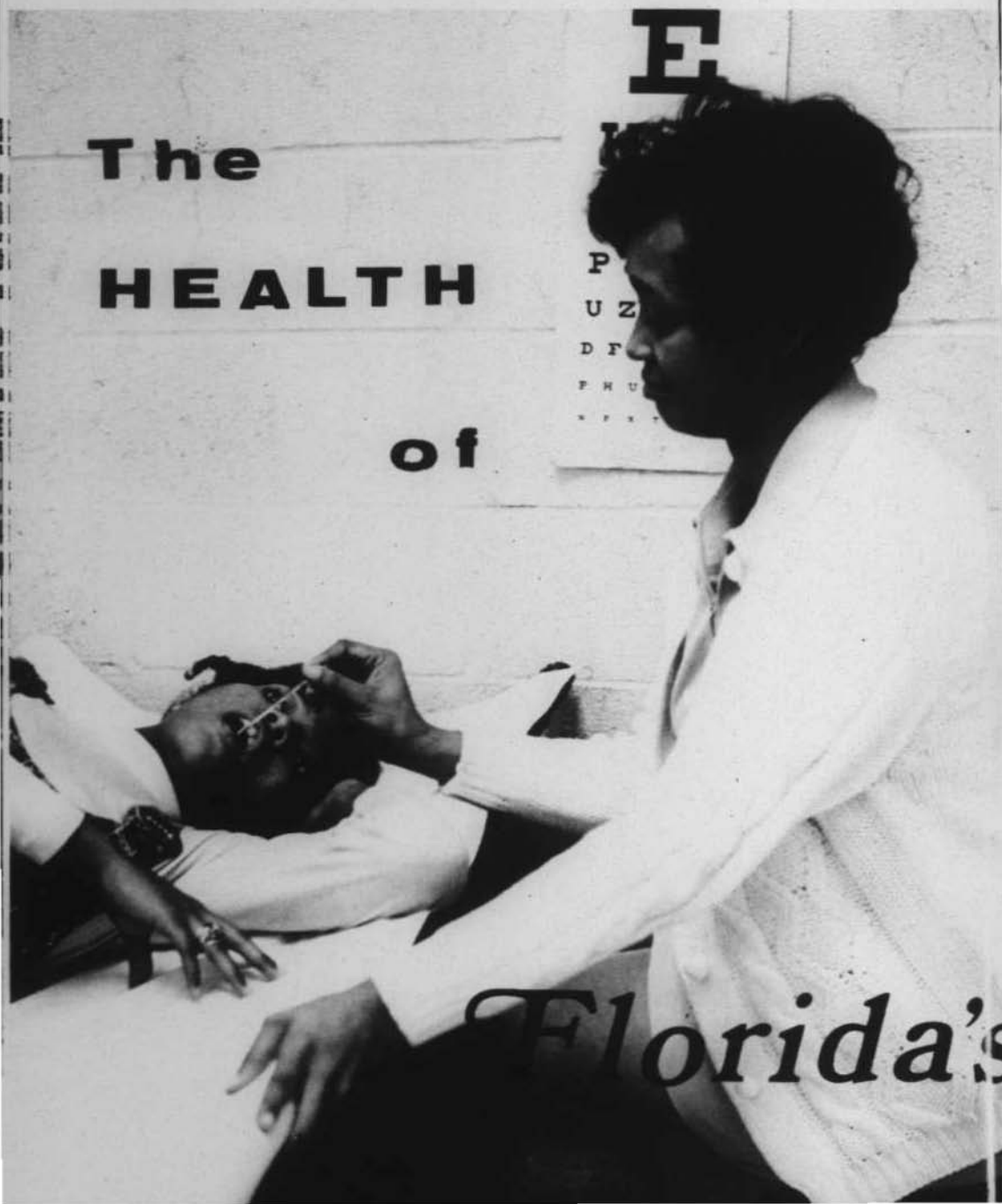
ALL OF FLORIDA'S CHILDREN
(Cover photo) — The Division of
Health has an obligation to safe-
guard the health of all of Florida's
children and youth from infancy to
adulthood.

SCHOOL HEALTH AIDE — The
sick child in school is assisted by
the school health aide who is
trained by the public health nurse
to supervise the health room.

The HEALTH of

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* Johnny, a juvenile diabetic, falls on the school playground and injures himself. His teacher, who has been given first aid instruction and alerted to the boy's condition by the public health nurse, takes Johnny to the school's health room. His mother is called; she comes and takes him to their physician. The public health nurse makes a follow-up visit to Johnny's home to see if he has had any complications.

* Jack T, a sanitarian from the county health department, takes swab culture tests of dishes and utensils in a school lunch room. He sends the swabs to a public health laboratory where plate counts are made. The dishes are found to be heavily contaminated with bacteria. The sanitarian discovers that the dishwasher is not functioning properly, and the hot water is not of sufficient temperature to sanitize the dishes. The situation is corrected and the children in the school are protected from a possible outbreak of food-borne illnesses.

* A 10-month-old girl, Sarah Ann, is brought into a county health department clinic by her mother. The infant is suffering from chronic diarrhea, progressive malnutrition, and a poor appetite. She does not respond to treatment as expected. The clinic physician, continuing to observe the child and her response to various foods, suspects that Sarah Ann has an intolerance for the gluten in wheat and rye flours. She recommends a diet excluding all such flours. The baby improves, then relapses when a cousin gives her white bread. The physician again explains the importance of the special diet and arranges an appointment with the regional nutritionist. She helps the mother to work out a planned diet for Sarah Ann. Once wheat flour is excluded from the baby's diet and corn meal substituted, the girl begins to thrive.

These are just three examples of how the Division of Health of the Department of Health and Rehabilitative Services and its help-

CHILDREN AND YOUTH

mates in public health — the county health departments — are involved in child health . . . a major component of the public health programs in Florida.

Of Florida's population of 6.8 million, 2.4 million are children and youth under 21 years of age. For these youngsters, the Division of Health provides a wide range of services, such as health maintenance clinics, including dietary guidance for infants and preschoolers; screening tests during the school years; special laboratory examinations; and clinics for specific diseases and health problems: immunizations and venereal diseases. The Division of Health has an obligation to safeguard the health of all children and youth, but has a primary responsibility to the medically indigent. On a state-wide average, 25 per cent of the population is medically indigent; in some areas, it may be as high as 50 per cent.

The birth of a baby and its growth and development were once left to chance. Half a century ago there were few organized maternal and child health programs. Maternal and infant clinics were rare. Now they are part of the activity of every county health department in Florida; and the hazards of being born and of growing up have been reduced progressively. Health care for mothers and children stand out as a fine example of public health programs.

This issue of *Florida Health Notes* will tell you about the program of the Division of Health that assists children and youth from before their birth, through their years of development, and until they reach adulthood.

To put more emphasis on child health, the Division of Health has proposed a new Bureau of Child Health to coordinate existing programs, start new projects, and encourage county health depart-

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ments to expand and improve child health and adolescent clinics. Until such a bureau becomes a reality, the programs are being administered by the Section on Child Health.

Beginning of Services for Children and Youth

The ancestor of today's child health programs dates back 83 years to the beginning of the Division of Health as the old State Board of Health. Early emphasis was on communicable diseases that threatened the entire population and brought death to infants and children.

One such disease was smallpox. Dr. Joseph Y. Porter, the first state health officer offered the services of the State Board of Health to protect Floridians from smallpox, a major killer-disease at the time, by vaccinating every man, woman, and child who would come to the health clinics. He felt so strongly about vaccination against smallpox that he took a leave of absence from his job to urge the Florida Legislature in 1901 to pass a compulsory vaccination law.

However, there was much opposition to the law by business interests of the state. The law would have forced employees of the lumber, turpentine, and phosphate industries to be vaccinated before they could be hired. It did not pass the Legislature, but public health activity finally was victorious. Families where smallpox existed, for example, were ostracized socially and otherwise, and vaccination was widely practiced. Today, the threat of smallpox has been so reduced worldwide that routine smallpox vaccination of children is no longer recommended.

Other major diseases of the period which involved children were diphtheria, tuberculosis, yellow fever, and hookworm. Many of the infectious diseases have been reduced to a minor part of the public health picture, or completely eradicated.

The Florida Legislature in 1915 passed a law that provided for medical inspection of schoolchildren by the State Board of Health; but it failed to supply money to carry out the program. A Bureau of Child Welfare was established in 1918. Assisted by the Florida Federation of Women's Clubs, it registered and provided educational materials to expectant mothers, helped develop preschool clinics, and



COMPLETE EXAMINATION — Children should be seen at least six times by physicians during their first year of life, twice more during the second year, and at least twice more before entering school.

set up infant welfare stations. Milk depots were placed in the infant welfare stations in Jacksonville and Tampa to distribute milk to indigent families. Home visitations were planned and started with the help of volunteers.

In 1921, the U.S. Congress created the Children's Bureau and from this federal agency over the years, the State Board of Health received millions of dollars for maternal and child health programs. The Federal Social Security Act in 1935 expanded maternal and child health programs.

Public health has long recognized the close relationship between a mother's well-supervised pregnancy and a good start in life for her child. Such considerations led the State Board of Health to form the Bureau of Maternal and Child Health in 1936; this bureau has continued with the primary responsibility for such programs in the Division of Health. Only within the last few months have the child health programs been separated from the maternal and family planning aspects and made into a separate unit within the Division of Health.

Special Projects

In order to better serve children, the Division of Health, and the old State Board of Health before it, set up pilot or special projects (many financed by the Federal Government) to carry on research in health problems and find ways of diagnosing and treating them.

One such project was the Premature Demonstration Center, organized in 1950, to help reduce Florida's high infant death rate to which the death of premature babies contributed substantially. The Center, located in Miami's Jackson Memorial Hospital, hospitalized premature infants and provided a training center for physicians and nurses. It was phased out in 1966, coincidental with the start of Maternal and Infant Care Projects. These projects, currently in operation, are aimed at providing obstetrical care for expectant mothers and medical care for infants who are at high risk. More will be said about these projects later. During the 16 years the Center was in operation, Florida's infant death rate dropped from 33.1 to 27.1 per 1,000 live births. The Division of Health believes the Premature Demonstration Center was a contributing factor.

Retarded children, of which some 3,500 are born each year in Florida, were helped considerably by the establishment of a Developmental Evaluation Clinic in Miami. Its multi-disciplinary staff included pediatrician, psychologist, social worker, nurse, nutritionist, and other specialists. The aim has been to arrive at a better understanding of mental retardation and work out effective procedures to meet the problem. At the present time, there are two Florida projects on mental retardation funded through the Division of Health — the Dade Developmental Evaluation Clinic, now in the Mailman Center for Child Development, and the Tampa Diagnostic and Evaluation Clinic on the grounds of the MacDonald Training Center.

Obstetric and pediatric seminars for physicians, nurses, and public health workers have been sponsored since 1950 by the State Board of Health (now Division of Health), Maternal and Child Health Services of the U.S. Public Health Service, and various exhibitors. Cooperating are also health departments of Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennes-

see; the Florida Medical Association, and the Florida Association of Family Physicians. These seminars are for the exchange of information on prenatal, postnatal, and pediatric practices.

A special Children and Youth Project provides medical care to children between one and six years of age in a large area of Dade County. Started in 1966, it served approximately 5,400 children during the fiscal year 1970-71.

The Division of Health, along with the Department of Education, has been responsible for the school health program. Over the years this has been an effective and cooperative effort. During 1939, the old State Board of Health, Department of Education, and voluntary health organizations prepared the first issue of Bulletin 4-D. *A Guide to Health Programs in Florida Schools*. This publication, now going through the latest of several revisions, is currently the prime source of information for those planning and conducting school health programs.

Responsibilities

The traditional role of public health is case finding and prevention. Case finding happens in many ways.

A public health nurse walking down a street and seeing a clothes line full of diapers, realizes that she has not been in contact with the new mother. So, when she stops to visit, the public health nurse finds a schoolchild who is not in school because of illness, a grandmother who is confined to bed because of crippling arthritis, and a husband who is unable to work because of a handicap.

If a public health nurse sees a child in school with a rash, she will investigate to find out if the child has a communicable disease or merely a skin condition.

Case finding is trying to detect the abnormal and deviations from health. Methods include x-rays, tuberculin skin testing, blood sugar studies, dental, hearing, vision and phenylketonuria (PKU) screening programs. Through experience, the Division of Health knows which population groups are most likely to have the disease and may confine its search, though not necessarily, to those high risk groups. Diabetic screening, for example, is especially aimed at relatives of

WELL-BABY CONFERENCE — A physician and public health nurse examine an infant in a public health clinic. The Division of Health has a special responsibility to children of medically indigent families.



known diabetics, although mass screening projects are conducted in which everyone that presents himself is tested.

Prevention includes immunizations, environmental sanitation, and quarantine. Immunizations are provided and administered to prevent the spread of communicable diseases. Treatment, as far as public health is concerned, is limited to those who are medically indigent — except from certain communicable diseases.

The Florida Legislature has given the Division of Health the legal basis for the involvement in child health. For example:

Chapter 381, Florida Statutes, gives the Division of Health the legal responsibility to “supervise generally the enforcement of laws, rules, and regulations relating to sanitary conditions of communicable diseases among humans, from animals to human, quarantine, and the general health of the state.”

Chapter 383, puts the Division of Health right in the middle of the maternity and infant care programs and authorizes it to receive federal monies for these purposes. It also gives the authorization to make metabolic disorder tests (PKU), and to supervise the placing of prophylactics in the eyes of infants to prevent blindness from gonorrhea.

PKU SCREENING — A laboratory technician reads the results of phenylketonuria (PKU) tests. This is just one of several screening services the Division of Health provides for children.



Chapter 232 gives the health agency the responsibility to carry out medical examination of schoolchildren and inspection of school buildings — in cooperation with school boards. A 1971 amendment to the chapter added a compulsory immunization law that requires schoolchildren to be immunized against communicable diseases.

The Division of Health has as its major operating arm a \$26 million county health department system with units in every county. These local health departments have clinics in nearly every small community and large city neighborhood. Through these clinics and health centers, public health workers can reach out to nearly every home on every city street and back country road.

The staffs of the county health departments, working directly with the families, include some 915 public health nurses, 438 sanitarians, 24 sanitary engineers, 124 physicians, 30 public health dentists, 33 regional and county nutritionists. In addition, there are community health workers of various races and national origin who

provide liaison with their communities. Clerks in the offices keep records and correspondence relating to the child health programs.

Backing up the staffs of the county health departments are the consultants of the Division of Health (pediatricians and other physicians, public health nurses, sanitarians, health educators, nutritionists, screening consultants, statisticians, epidemiologists and other field workers, microbiologists, chemists, and many special disciplines) who all work to make this a better world for children and youth.

Serving 2.4 Million Children and Youth

Children play a big part in our lives. They are the coming generation. The Division of Health knows it is important to the future to see that our children and youth have the most healthful beginning, birth, and development. It is those first years that are the most important in an individual's life. Coupled with the chromosomes he inherits from his parents, the nutrition and health care that a person receives during his early years can determine whether he will be sickly or will enjoy radiant health for the rest of his life.

Florida's 2.4 million children and youth under 21 years of age make up 35 per cent of the state's population. The Division of Health and county health departments are available to all these children and youth. Naturally the health agencies do not have the staffs to serve all fully, but they do see tens of thousands in clinics, schools, and family homes. They immunize hundreds of thousands against communicable diseases each year.

The Division of Health serves as liaison with other state and federal agencies and with voluntary health organizations in the areas of children's health. It plays a coordinating role with many agencies and works toward a harmonious effort to provide a continuous program throughout the years of children's growth and development.

Services for Mothers and Infants

Services begin for children before they are born — while they are still in their mother's uterus. The aim of prenatal and postnatal care is to assure that the baby will survive and that he will grow into a whole and healthy individual. To this end, it is necessary to guard the

mother's health so that she will be capable of meeting her child's needs during and after her pregnancy.

Florida has a preliminary infant death rate of 20.6 per 1,000 live births in 1971. There has been a sharp decline from the 33.1 rate of two decades ago. Between 1951 and 1961, the birth rate dropped four points to 29.1 per 1,000 live births, and in the past decade, it dropped another 8.5 points. This was a faster decline than the national rate of 6.1 points during the same period.

The decline of the past decade was due to a drop in infections and accidents among nonwhite babies during the 11-month period following the first month of life.

During the early part of the century there were several thousand midwives in Florida who were delivering babies. Many of these were untrained. The practice was frequently handed down from mother to daughter. In 1931, the Florida Legislature passed a long-needed law requiring that midwives be licensed by the State Board of Health. Many of the "granny" midwives — both male and female — went out of business when a series of institutes were started to train them and registration was begun. Over the years, the number has dwindled until in 1971 there were less than 100 still actively serving expectant mothers. Before a midwife can accept a patient, the expectant mother must be seen by a physician. In some areas of the state,



SERVICES FOR INFANTS — A youngster is given his first DPT (diphtheria-pertussis-tetanus) immunization by a public health nurse. Immunizations, including polio, should start at two months.

private physicians do not accept obstetrical patients as part of their practice and this has placed a hardship on pregnant women. The nurse-midwife, a highly-trained nurse who has specialized in midwifery, has stepped in to assist the physicians in obstetrical practice.

Preparation for the birth of the child is important. Public health physicians and nurses see expectant mothers in prenatal clinics. Their health is supervised so that their children will have a chance to be healthy and obtain a good start toward a better life. Supervision, including a complete physical examination and laboratory work, is provided through the maternity cycle. Notice is taken of any complications which may interfere with a normal birth. Guidance is given to help mothers make plans for delivery by either a physician or midwife. After delivery, both mother and infant are given follow-up care. The physician first examines the infant's heart, respiratory, and lung functions, and looks for evidence that the child is not adjusting immediately to life.

Five maternal and infant care projects (four one-county and one 13-county) have been set up to detect those births that are high risk to mothers and infants. Those in Dade, Broward, Palm Beach, and Orange Counties serve large metropolitan areas. The North Central Florida Project includes Alachua, Baker, Bradford, Clay, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Levy, Marion, Suwannee, and Union Counties. This rural area has small hospitals, few physicians, and a number of "granny" midwives. The projects have "core teams" of physicians, nurses, social workers, and nutritionists who provide low income maternity patients and infants with services. Mothers are given hospitalization and delivery under the supervision of qualified obstetricians. Infants who are born with or develop illnesses or handicaps during the first year of life are given medical and surgical treatment.

The Division of Health's Bureau of Vital Statistics, while not especially for children, recorded some 116,453 live births to Florida residents in 1971 (preliminary figures). It also collected statistics on deaths, stillbirths, and adoptions. The Public Health Statistics Section studies these infant birth and mortality statistics, and data on population distribution so the Division of Health can more efficiently apply itself to public health programs.



HEARING TESTS — the Division of Health, county health departments, and schools cooperate to carry out hearing screenings of children. A conventional hearing test is given at left; the test on the right is a verbal auditory screening technique that uses a picture board.

The Preschoolers

Once a child is born, he should be given every opportunity to develop properly. He should be seen at least six times by competent public health personnel during his first year of life, at least twice more during the second year, and twice more before entering school.

There are more than 520,000 preschool children in Florida who are five years old or less. During the fiscal year 1970-71, over 57,800 children and youth were seen in well-child conferences. They were examined and immunized. Mothers were taught what they could expect in developmental changes and how to deal with them. In some counties vitamins and iron were provided. A child may be treated for intestinal parasites or incipient disease, or referred to another health agency or medical specialist if additional treatment is indicated.

Public health clinics have a responsibility for children of medically indigent families, but as with the physicians in private practice, they would like to see each child regularly until he is 12 years old — or even through adolescence. But this rarely happens.

Some parents will bring their child to the well-baby clinics until he is one year old. Then until he is ready for school he has little health supervision. Parents often do not see the value of regular examinations and usually take their child to see a physician or to the clinic only because of illness. The ideal schedule of physical examinations is seldom attained.

The Child Health Section coordinates basic child health programs, promotes and assists in expansion and improvement of clinics for infants and children in county health departments by professional consultation, pays clinicians and nurses fees, and supplies material and equipment.

The Section provides consultant services and assistance with hearing, vision and phenylketonuria (PKU) screening programs. The consultant for the hearing screening program maintains an audiometer loan closet to make accurate, well-serviced audiometers available to county health departments for their hearing screening programs. The vision screening consultant on the staff provides instruction for observation and screening, and maintains a limited loan closet. Inservice training is carried out with county health depart-

VISION SCREENING — The vision of children from a Head Start Program is checked by volunteers. One child (left) is instructed on how to respond to an Illiterate E Chart; another child (right) is given the vision acuity test.



ment staff members and volunteers for use of hearing and vision screening equipment. Both consultants work toward the development of highly effective screening programs of uniform quality throughout the state.

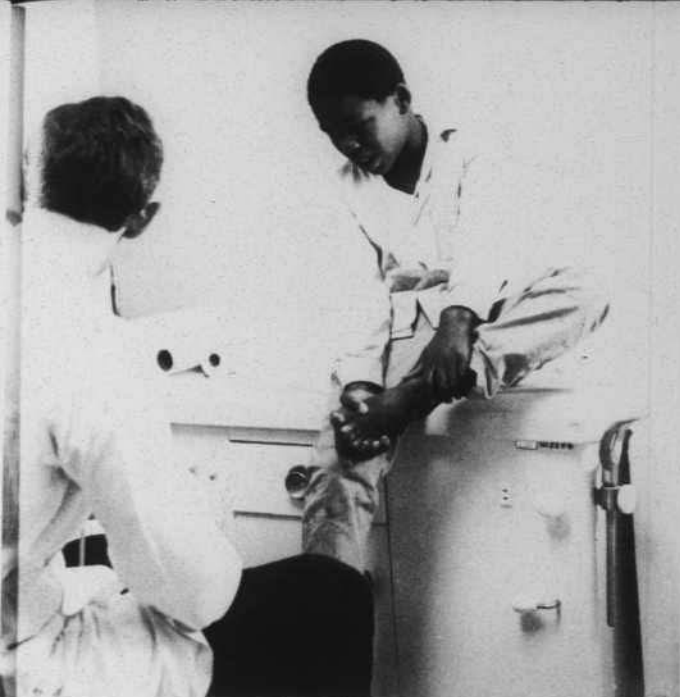
The staff of the Division of Health distributes a specially-designed Guthrie test kit for PKU to physicians, hospitals and county health departments. With the assistance of the Nutrition Section, requests are not for the distribution of a food supplement, Loefenalac, to youngsters with PKU. Nutrition consultation is also given to families if the physicians desire it.

In some counties children about to enter school — or a Head Start Program — are examined by public health physicians or by private physicians serving as consultants in county health department clinics.

Immunizations and Youngsters

Immunization builds up a type of resistance to infection. It is associated with the development of antibodies in the blood stream that resists attacks by viruses and bacteria. Such immunity must be acquired. Mothers who have antibodies against specific diseases pass these protective substances along to their children; but infants lose this immunity within one to four months after birth. To fully protect against such diseases as whooping cough (pertussis), diphtheria, tetanus, polio, rubeola (red measles), and rubella (German measles), the children themselves must be immunized. Vaccines are available for this purpose. Immunizations for diphtheria-pertussis-tetanus and polio should begin at age two months. Other vaccines and boosters should be given at intervals scheduled by the pediatrician or public health physician.

The Division of Health, through its Bureau of Preventable Diseases, supervises and promotes the regular immunization programs, mass campaigns, and venereal disease clinics. It keeps records on communicable diseases and studies the epidemiology of serious diseases and epidemics. Any increase in the number of cases reported above the normal in a geographical area, immediately draws the attention of the immunization teams of the Division of Health and county health departments.



IT HURTS, DOCTOR — A youth is examined and treated by a public health physician in a children's clinic. The Division of Health is expanding its services to children and adolescents.

Florida's compulsory immunization law, during its first year, caused a large increase in child health services. Not only was there an increase in the usual Division of Health and county health department activities, but more immunizations were given during 1971 through regular well-baby and family clinics. Following are the list of communicable diseases for which vaccines are recommended for children, and the number of immunizations given during 1971: diphtheria — 181,228; pertussis — 111,342; tetanus — 396,535; polio — 172,392; rubeola — 126,527; and rubella — 201,956.

Child Day Care Centers

Division of Health consultants and county health department staff members are involved in the licensing and/or inspection of child day care centers in 21 Florida counties and several municipalities. The health agencies are involved because they desire to see that the children are cared for in safe and healthy environments, and that both the personnel who staff the centers and the children are in good health and have no communicable diseases. The nutritionists of the Division of Health and county health departments work with individual centers and the Florida Association on Children Under Six — the organization of day care centers — to plan nutritious meals. The centers are checked regularly to see there is no over-crowding of

When a child is sick, the teacher refers him to the school health room. School health aides are employed in many counties to assist with the sick child. They are trained and supervised by public health nurses. These para-professionals are very helpful in assisting the public health nurse with vision and hearing screenings and other programs. They also work with the principal and teacher in making decisions as to whether to send the child back to class or to call his parents who can take him to their private physician or to a public health clinic.

The public health nurse usually provides follow-up until treatment is completed or is sometimes refused by the parents. Because she is a "walking encyclopedia" of services available to the community, the public health nurse is able to refer the family to the proper governmental or voluntary health agency for additional care and/or treatment.

Unfortunately some school-age students, as well as older youths, require care in special clinics. Because venereal diseases are frequently found in children and youth as young as pre-adolescence (over 500 cases of gonorrhea were found in 1970 in children 14 years and under), many are seen in public health VD clinics.

Over 7,300 teenage girls had illegitimate babies in 1970. Due to this situation some county health departments have special clinics for pregnancy school girls. In a few counties in Florida, school boards, county health departments, and many organizations and individuals have cooperated in setting up special classes for these girls so that they can continue their education and be capable of supporting themselves and their babies.

Some counties also have special clinics for obese children and teenagers. Many, with the assistance of regional and county health department nutritionists, have organized weight-watchers clubs. These clubs promote eating sensibly and exercising properly.

An indication of how well a child is developing can be documented by noting his height and weight at regular intervals. Many schools maintain height and weight charts on students. In some cases abnormal deviations from the growth curve are reported to the public health nurse; but many times they remain unnoticed in the students' records. Failure to attain normal growth is often a matter

of poor nutrition, or poor assimilation of food. This failure to grow should be noted and action taken.

The Environment of Schoolchildren

The environment in which children grow and develop is important. Standards of school sanitation and the environment are set by the *Florida Administrative Code*. Sanitarians from county health departments inspect school buildings and playgrounds for safety, possible rodent and insect infestation, potable water supplies, and liquid and solid waste disposal. School lunch rooms are inspected for cleanliness, proper operation, correct refrigeration, and safe foods. During 1970, sanitarians made over 4,027 visits to 1,740 Florida schools. They also gave attention to schools regarding adequate lighting, heating, and ventilation.

The sanitarians also are involved in product safety. At the request of the Division of Health and the U.S. Food and Drug Administration, they remove hazardous products and unsafe toys from the shelves of retail stores and wholesale warehouses.

Nutritionists and Children

Foods play an important part in children's growth and developments. If they do not have the proper foods in the right amounts, they may be malnourished, obese, or even hungry. Even though children may have plenty of food, they may not have the right kinds or be unable to properly assimilate it. An expectant mother, newborn baby, growing preschooler, or teenager may have nutrition problems.

County and regional nutritionists give instruction to public health nurses on proper diets for these types of patients seen in public health clinics. They give individual diet counseling or group instruction to a large number of expectant mothers and families with infants, preschool, and school-age children.

The nutritionists also hold classes and demonstrations on family nutrition and food selection, purchasing and preparation. They relate this to the best use of food stamps. They also hold nutrition educa-

children, that the centers are clean, and the buildings and equipment are safe. The Division of Health staff continues to work diligently in support of legislation providing statewide licensure of child day care facilities.

Services for Schoolchildren

Once a child has entered school, his health continues as a major responsibility of his parents, but the school and health agencies have more opportunity to view the child and his health.

There are some 1,604,000 schoolchildren in Florida between the ages of six and 18 years. These require periodic medical examinations and screening tests. Each child should have at least one medical examination during his elementary school year, one during junior high, and one during senior high. Over 281,000 children and youth were screened for visual defects during the fiscal year 1970-71; and over 204,000 were screened for auditory defects. Assistance in the diagnosis and treatment of indigent children was provided by many civic and governmental agencies and organizations, including Crippled Children's Commission, Lions' Clubs, and Shriners.

Teachers are instructed by public health nurses on the various symptoms which may indicate a sick child, so they often can tell when a child is ill — possibly even before the parents are aware of it.

SCHOOL SANITATION — The Division of Health is interested in the healthy environment of schoolchildren. This includes the cleanliness of dishes in the school lunch room and proper refrigeration.



TALK ON NUTRITION —
Students in an elementary school respond to questions asked by a Division of Health nutritionist. Nearly all aspects of the nutrition program involve mothers, infants, children and youth.



tion workshops for teachers and food workers of child day care centers. These people have a direct effect on the nutrition of Florida's children and their parents.

Dental Health and Children

Dental caries is perhaps one of the most wide spread diseases among children. The Division of Health desires to assist children through health education to know and practice preventive dental health measures, and to reduce the unnecessary and premature loss of teeth through dental decay and other diseases of the mouth.

Dental services are provided in 34 counties to expectant mothers and indigent children and youth. Where public health dental clinics are not available, those in acute need are referred to private dentists. Over 32,800 youngsters were given treatment in dental health clinics during the fiscal year 1970-71. Services included inspection, fillings, extractions, and applications of fluoride.

The Division of Health's laboratories provides a method of saliva analysis for lactobacilli. This service is made available to dentists and over 1,230 lactobacillus kits were requested in 1970 by dentists. The laboratory analyzed some 1,300 specimens.

DENTAL SCREENING —
A public health dentist from the Division of Health checks the teeth of children in an elementary school. Many children were found to be in need of dental care.



Migrant Programs and Children

Migrant children, perhaps, have the hardest life of any children in Florida. They are continually moved from one work site to another by their parents who follow the crops from Florida to New York State, Michigan, or some other state and back again. They are not allowed to attend any one school regularly for any length of time; they frequently live in migrant camps — some of which are little more than a series of plywood buildings that meet minimum standards.

The federally-supported programs for migrant farm laborers help supply medical services for these migrant children. Such services include physical examinations, laboratory studies, hearing and vision correction, dental work through special clinics, and follow-up carried on by county health department nurses.

Sanitarians from the county health departments and the staff of the Division of Health's migrant programs inspect migrant camps where children live. Camps that meet Division of Health standards are licensed to operate; those that do not meet standards are closed.

The state and county health agencies also cooperated in 1971 with the Department of Education in a "Migrant Education and Health Project" for children of migrant families. While the Department of Education was responsible for the educational aspects of the program, the Division of Health and county health departments provided health services for the children and youth.

Youngsters - Important Recipients of Services

The Division of Health, as previously noted, has a number of programs and studies that are especially for children and youth. In addition, many of the bureaus and sections of the state health agency are engaged in other public health programs in behalf of the people of Florida. These are activities not especially oriented toward children and youth, but the youngsters are important recipients of the services.

For example, the public health laboratories provide laboratory back-up to physicians and county health departments for many medical problems. Those that directly affect children and youth include:

- * tests for hemoglobin, hematocrit, intestinal parasites, Rh incompatibility, phenylketonuria, narcotics, sanitary quality of food, and drinking water;
- * viral diagnostic services, including viral isolations;
- * bacteriology (tubercle bacilli, staphylococci, shigella, enteric pathogens); and
- * serology studies for syphilis, and cultures and smears for gonorrhea.

The Division of Health provides county health departments and schools with educational materials, including *Florida Health Notes*, pamphlets, programs, and promotional aids. Its audio-visual library distributes movie films to schools and other groups. In 1970, these educational aids were seen by some two million people. Professional growth is provided with the aid of a library of almost 27,000 scientific textbooks and journals, and subscriptions to 450 professional magazines.

The Division of Health

- * through its adult health and chronic disease programs, has projects underway that are relevant to high blood pressure in children, juvenile diabetes, and acute rheumatic fever;

- * carries out hospital licensure program that regulates space reserved for newborn and for pediatric areas;

- * brings arthropods and other biting insects under control so that children's lives may be more pleasant and disease free; and

- * promotes the vaccination of dogs and cats against rabies to protect both children and adults.

Direct Services to Youngsters

The Division of Health, at the state level, offers technical and administrative assistance, and promotes service programs through the county health departments. The grassroots work is carried on by the 67 county health departments which provide a full range of children and youth health services in clinics and schools.

BACTERIOLOGY — Division of Health laboratories provide back-up services to physicians and county health departments. These services for children include the examination of specimens for enteric pathogens.



The public health nurses are the major providers of many child health and supporting services, including newborn follow-ups and referrals, infant and child health maintenance clinics, school health, and PKU screenings. Preparations are being made for expanding roles in child health and adolescent clinics.

Public health nurses and community health workers seek out children who need health services and make clinic appointments for them. Because many families who need to use the clinics have no means of transportation, some county health departments have volunteers who pick up the youngsters, take them to the clinics, and return them to their homes. A few local health agencies maintain small buses for this purpose. A growing number of county health departments hold evening clinics so parents who work during the day can bring their children during their off-hours.

The Cost of Children's Health

No one can put a price on America's future generation. Health and wellbeing are two of the most precious things our children and youth can possess. To limit health and well-being because of dollars and cents is to do the young people an injustice.

Nevertheless, in today's practical world, the cost of providing health care to children must be recognized. The Division of Health has few programs that do not directly affect youngsters to some extent.

Approximately one-third of the Division of Health's 1971-72 budget of \$51.4 million will go toward children's health. The money is contributed by the taxpayers of Florida, the Federal Government, county governments, local boards of public instruction, municipalities, and gifts and donations.

Some of the special children and youth projects and their costs are:

- * Five maternal and infant care projects — \$4.25 million;
- * Children and Youth Project of Dade County — \$877,231;
- * Division of Health and county health department migrant projects — \$1.1 million;
- * Migrant Education and Health Project — \$200,000;

- * Venereal disease control — \$560,000;
- * Dade County Development and Evaluation Clinic — \$157,000;
- * Tampa Diagnostic and Evaluation Clinic — \$96,000;
- * Immunizations (vaccine and state staff) — \$620,000 (County health department personnel are a significant part of this program and the amount of time put in by the county people is incalculable.);
- * Laboratory services for children and youth — \$730,000; and
- * Approximate share of county health department funding — \$8.5 million.

The Future of Children's Health

The Division of Health's current health programs for children and youth cover a wide range of services for Florida's 2.4 million youngsters. It is the objective of the state and county health departments to provide the best health care for the state's future citizens.

This care makes necessary the cooperation of the Division of Health with other state agencies in such child-oriented programs as the control of dangerous drugs, the reporting of battered children and referral of children with specific health needs to other agencies and organizations for medical care.

One of the first in a series of forward steps to promote and enhance the health programs for children and youth is the creation of a separate unit by the Division of Health. One immediate goal is to increase the availability of the Division of Health's consultation services to the county health departments. Another will be improved coordination in the planning and conducting of the many programs affecting child health which are carried on throughout the Division of Health.

Already there are movements to provide more services to children — from the time they are conceived to adulthood — to give them a good beginning, a healthy, happy childhood, and to prepare them for a productive life.

Division of Health of the Florida Department of Health and Rehabilitative Services

HON. REUBIN O'D. ASKEW

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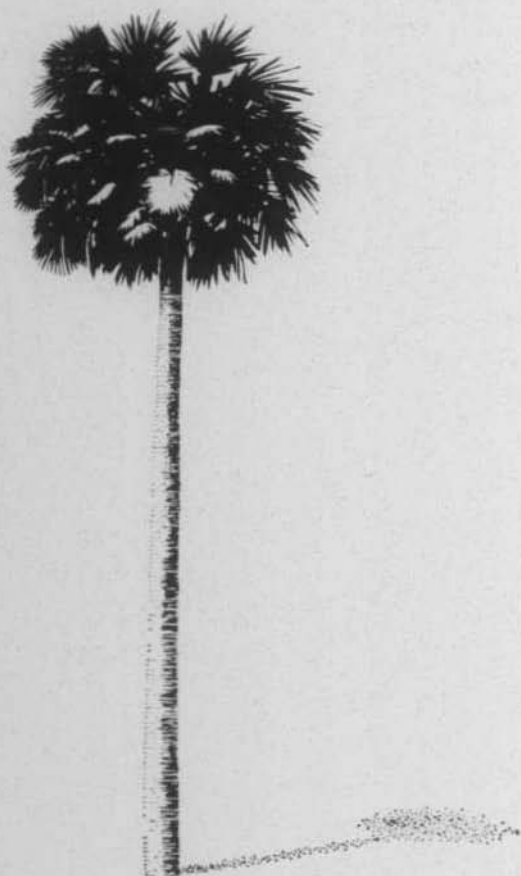
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**Division of Health
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Florida Department of Health and
Rehabilitative Services**

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FLORIDA HEALTH NOTES



1971's

VOLUME 64 — NO. 6
JUNE 1972

Exciting Worlds

of Public Health

A Second Class Publication

1971's Exciting





Worlds of

PUBLIC HEALTH

There are many fanciful worlds in our lives. They bring color, emotion, inspiration to our everyday existence. They can influence our lives, uplift our spirits, fire our imaginations, inspire us to greater and higher goals.

These worlds can take us out of the conventional and ordinary paths. They have given us Leonardo da Vinci, Robert Louis Stevenson, Albert Schweitzer, Walt Disney. They have made possible the famous painting, *Mona Lisa*; the book, *Treasure Island*, heart transplants, and Mickey Mouse.

If we let these worlds exist in our lives, they can make them happier and brighter. They are all around us:

- * the captivating state of childhood;
- * the fascinating world of the circus;

WORLDS AROUND US — Similar to the heavenly galaxy (cover photo), public health is made up of worlds which affect our lives.

* the engrossing universe of books;

* the tantalizing community of finance;

* the charming cosmos of fashion;

* the alluring sphere of entertainment; and

* the galaxy of the sciences.

All of these worlds are intriguing. But there are other worlds which affect you — the resident of Florida, and you — the visitor to the Sunshine State. These are the exciting worlds of public health — that protect your health, allow you to enjoy those other worlds, and give you a sense of well-being.

This issue of *Florida Health Notes* will tell you about the various worlds of public health — the worlds of mothers and children, of adult health, of communicable diseases, of dental health . . . environmental health,

and the world of record keeping and statistics that provide the information and financing to make these worlds of public health operate. All of the information in this issue comes from the 350-page *1971 Annual Report* of the Division of Health.

The World of Communicable Diseases

The captivating world of childhood is one of learning about life and enjoying a carefree and unstrained existence. These are years for swings and dolls, for games and school. But there is another world that exists within childhood. That is the world of viruses, bacteria, germs and other minute organisms that make children ill.

Too often schools have been called "a place where children exchange diseases." But this need not be true. The passage of a compulsory immunization law in

FLORIDA HEALTH NOTES

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JUNE 1972

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1971 is viewed by the Division of Health as a landmark in its continuing efforts toward maximum control of the communicable diseases.

The licensing of the rubella (German measles) vaccine in 1969 signaled the beginning of a massive program to immunize more than a million children in Florida. During 1970, about 510,000 children of the target population were immunized; in 1971, the program was aimed at preschool children. During the year, 796,800 children were immunized in public clinics and programs.

Despite these highly effective vaccines, sickness and death continue from diphtheria, whooping cough, measles, rubella, tetanus, and mumps. These are unnecessary and can be prevented through adequate immunization. In spite of the Division of Health and county health department, less than one-half of Florida's children under five years are adequately immunized.

A sizable outbreak of measles among young school-

WORLD OF CHILDHOOD — The gaily-painted horses of the carrousel remind us of the happy days of childhood.



children and preschoolers in St. Petersburg during the autumn attracted international attention. Outbreaks, or the shadow of outbreaks, prompted intensive immunization campaigns in nine counties. Some 60,000 children received vaccines. In addition, special campaigns in Hillsborough, Orange, Broward, and Dade Counties immunized 12,500 more.

Following the outbreak of flu-like cases in 1970, there was less influenza in 1971. Toward the end of the year there was a rapid build-up of flu-like diseases that appeared to be mostly of the common cold type of virus.

Non-typhoid salmonella cases were up over the 1,500 mark and continued as the leading food poisoning problem. New aspects of the problem was salmonella associated with pet turtles that are commonly sold in pet shops. Between 70 to 90 per cent of the turtles tested in some areas of the state were found to be contaminated. Between 100,000 and 300,000 cases of salmonellosis in the United States each year are associated with turtles — according to the National Communicable Disease Center.

Venereal diseases attracted public attention during 1971.

Primary and secondary syphilis increased 20 per cent; early latent syphilis, 17 per cent; gonorrhea, 27 per cent. The increase of gonorrhea demanded serious re-evaluation of control efforts. Gonorrhea studies recently concluded confirmed the suspicions of asymptomatic females who have the disease and surprisingly, her counterpart, the asymptomatic male. The VD control program would advance slowly without the support of the public and private physicians — who treat 80 per cent of all VD cases.

A sizable outbreak of Venezuelan equine encephalitis in Texas was considered a threat to all Southern states. A massive, state-wide vaccination program, carried on by the Division of Health, State Department of Agriculture and Consumer Services, and the U.S. Department of Agriculture, inoculated some 129,000 horses — approximately 90 per cent of the state's horse population.

The World of Mothers and Children

Motherhood is a world that requires special care and attention. In 1971, more and more Florida mothers were given early care through comprehensive

programs of prenatal and postpartum care, family planning, and nutrition guidance.

Of the 234,529 indigent women of childbearing age in Florida, 79,037, or 33.7 per cent, were provided contraceptive services through public health clinics. The majority of women were using oral contraceptives; 17 per cent were using intrauterine devices; and 14 per cent had other methods of contraceptives.

Concern for the health of adolescents led to the establishment of four clinics to serve this age group. A total of 60 other new clinics was established: 20 for infants from birth to 24 months; 10 for children from two to 12 years, and 30 combination clinics for infants, children, and youths of all ages.

Nutrition consultation and diet counseling was given by 40 nutritionists to women, of childbearing age, preschool and schoolchildren, persons with chronic diseases requiring diet

LOFTY VIEW — The long-necked, long-legged giraffe views his world from his pen at the zoo. County health departments carry out public health operations at the grass roots of the state.



therapy, older persons, and low income families.

Diet counseling was given to pregnant women attending clinics and through school programs to teenage mothers. Assistance on nutritious foods for infants and preschool children was given through child health clinics. School food service personnel and teachers received nutrition information, educational methods, and materials during inservice education sessions.

Nutrition surveys of 2,200 seasonal farm workers and their families in Palm Beach and Lee Counties were concluded in 1971. Those individuals needing health services, food, or financial assistance were referred to community agencies. An intensive nutrition educational program was directed toward families having nutritional health problems.

Institutional nutritionists assisted hospitals, extended care



facilities, and nursing homes, and child day care centers to meet nutritional needs of patients and children.

Public health nurses were called upon to undertake new and additional responsibilities — often at the expense of traditional and established activities. The trained nurse-midwife was legally recognized, and rules and regulations for her activity were written. It is anticipated that these experienced professional nurses may be helpful in the

prenatal, postpartum, and family planning services.

The World of Dental Health

The world of dental health is one that needs expanding. Public health dentists find that dental caries are one of the most common diseases among Floridians.

Thirty-three county health departments operate 56 dental clinics in which 53,338 persons were treated. Some 80,000 fillings were placed; 35,300 teeth were extracted; and 10,667 topical applications of fluoride were made.

Florida is in its third decade of controlled fluoridation — a measure that has proven satisfactory. It has been adapted readily by small and large water systems and the adoptions have been followed by improvements in oral health and more economical public health measures. Over 17 water supplies, serving more



THE WORLD OF THE FLYING TRAPEZE — Public health is as exciting as the world of the aerialists who perform high above the circus' center ring.

than 60 cities with an estimated population of 1.2 million persons, have controlled fluoride. Another 19 water systems, serving another 614,000 persons, have fluoride as a natural component.

A pilot dental health program for fourth, fifth and sixth grade schoolchildren in Baker, Clay and St. Johns Counties ended in November. It involved the self-application of fluoride prophylaxis paste as a method of caries prevention. The procedure was easy to carry out, the cost of materials and professional manpower nominal, the children used the paste readily, and there were educational benefits for the children.

The World of the Elderly

The Division of Health has much responsibility for the world of the aged, particularly in the area of the prevention of chronic diseases. Florida's population of people over 65 is increasing, and heart disease, cancer, stroke and diabetes cause three-fourths of all Florida's deaths. Attention to prevention, early detection, and adequate treatment can often postpone complications, prevent disability, and prolong life.

Chronic respiratory diseases, including chronic bronchitis, emphysema, and asthma were the sixth leading cause of death in 1971. Discontinuance of smoking is an important means of preventing chronic pulmonary diseases and patients will respond beneficially to the stopping of the smoking of cigarettes.

Cancer — the second leading cause of death — took some 14,400 lives. It is also the leading cause of natural, non-violent death among children — exceeded only by death from accidents.

Over half of the cancer deaths were in two sites — the digestive organs and abdomen, and the respiratory system. The latter is increasing at an alarming rate among both sexes.

Over 73,000 medically indigent women were given pap smears for cervical cancer. Of these women, 71 were discovered to have cancer and were treated.

German measles is thought to be an important factor in congenital defects of the heart and circulatory systems. Other factors are the exposure of the expectant mothers to irradiation and extremes of heat, cold and noise. Approximately 300 deaths

from congenital defects of the cardiovascular system occur in Florida each year.

Over 31,000 persons were tested in cardiovascular screening programs in 25 counties. Over 5,000 had to have the 12-month follow-up — which included medical history, chest x-ray, EKG, blood pressure, blood chemistry, and urinalysis.

Over 1,300 Floridians died of diabetes — the ninth leading cause of death. Diabetes ranked as the third leading cause of blindness — behind cataracts and glaucoma. Insulin was distributed


to 3,600 residents of the state who were receiving welfare assistance.

Most cases of diabetes can be easily controlled by early diagnosis and proper treatment. Screening for diabetes and education of the public are very important. Screening campaigns in 51 counties tested over 50,000 persons.

Seven full-time eye screening centers tested over 57,000

ALL THE WORLD'S A STAGE — A public health nurse conducts a health education class in a world of children — as exciting as the circus wagon.





persons and 1,028 were referred for diagnostic evaluation.

Thirteen new hospitals were licensed during the year. Twelve ceased operations — of which 10 were sub-standard hospitals. Some of these were replaced by new facilities. Plans for hospital construction totaling \$307 million were reviewed. A total of 210 hospitals — with over 34,000 beds — was licensed.

Florida nursing home programs continued to expand. Plans for construction of 67 new facilities — representing a cost of \$99 million — were reviewed. The 364 licensed nursing homes, homes for the aged, and homes for special services, had nearly 37,000 beds.

The World of Migrant Laborers

The world of the migrant farm worker is one not experi-

CINDERELLA'S CASTLE — The 18-story landmark at Walt Disney World represents a paradise of entertainment and fun. The Division of Health works to make the environment of man an equally pleasant place to live.

enced by most Floridians. The uncertainty of work and wages, the inadequate and crowded housing, the lack of education and medical care make this world an unpleasant one.

The Division of Health, with the assistance of federal monies, try to bring order out of the chaos of the lives of the migrant workers. Projects in 11 counties received some \$311,000; Palm Beach County received a U.S. Public Health Service grant for \$324,000; the Greater Miami Coalition received some \$520,000, and the state project received over \$61,000.

The grants enabled the projects to provide medical, dental, nutrition, health education, and nursing services to the migrants through family health clinics operated by the county health departments.

The Division of Health and the Department of Education carried on a hearing and vision screening program for migrant children. Another grant was awarded to give medical and dental services for migrant children and purchase needed equipment and supplies.

The Environment of Man

The health of man is greatly dependent upon the world around him. The air he breathes, the water he drinks, the disposal of his body wastes are all part of the factors that influence his health. The safety of the products he manufactures and uses, the toys that are made for his children, the quality and sanitary condition of the foods he eats all contribute to his state of well-being.

The protection of the consumer from harmful or hazardous substances and products has long been a function of the Division of Health. Concentrated efforts during 1971 were directed toward the developing of an effective program to control these hazardous products.

Children's toys were of particular concern. Those that were potentially dangerous were removed from retail stores by county health department sanitarians who carried out the field work. This activity required close liaison with the local health units and with federal officials who

were responsible for the Federal Hazardous Substances Law.

All county health departments were involved in environmental health programs, including: water supply, liquid and solid waste disposal, school sanitation, housing, swimming pools, nuisance abatement, rabies control, and the inspection of hospitals, nursing homes, child care centers, recreation areas, public buildings, and other facilities.

Sanitarians made over 209,900 visits to the 38,300 food service (eating and drinking) establishments, food processing plants, abattoirs, shellfish and crustacea plants, and food outlets (groceries and meat markets).

Permitted trailer parks totaled 3,898 with space for over 196,000 trailers. A large part of the trailer parks were served by municipal or central sewerage systems and municipal water systems.

There was an increase in the number of permitted migrant labor camps. In 1971, there was a total of 303 camps for migrant farm laborers with a total capacity of over 42,500 persons.

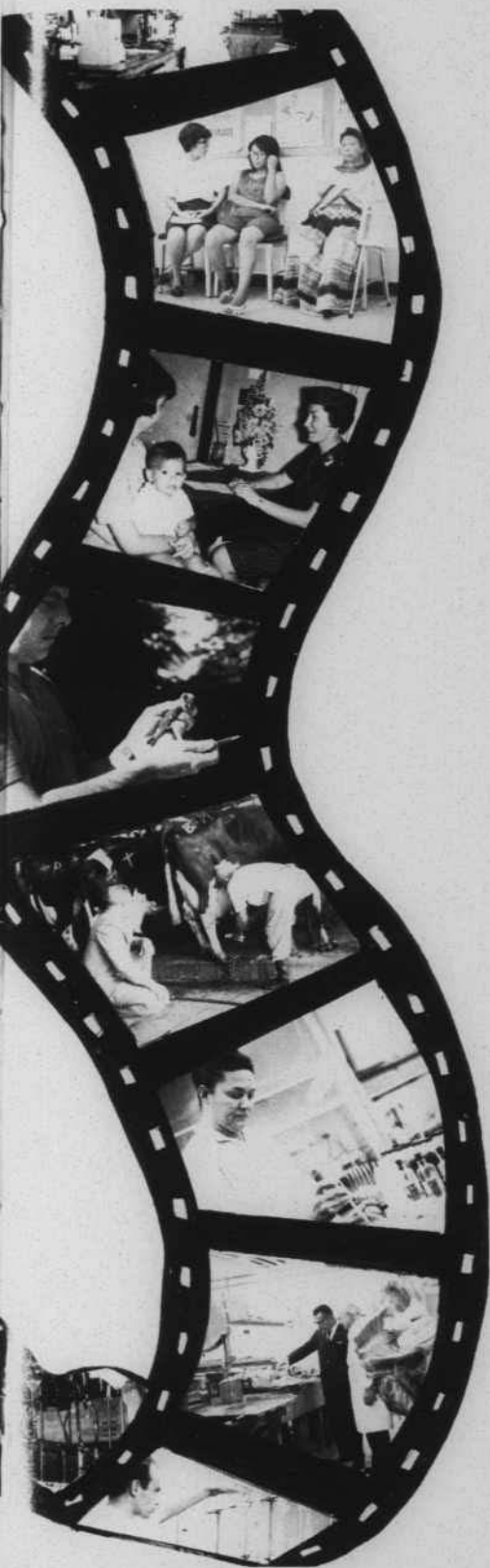
After two years of work, the chapter of the *Florida Administrative Code* on individual sewage disposal facilities was revised. This is a step forward in providing the mechanism to assure that central water and sewerage facilities will be available for urban development.

Under the federally-sponsored Mission 5000 Program, 98 open and burning dumps were closed. This is nearly two-thirds of Florida's goal of 150 dumps.

Plans for the construction of 1,544 waste water projects were processed and approved. The cost of construction of these projects totaled \$129 million — an increase of \$25 million over 1970.

There was a total of 3,403 sewerage treatment plants of various types and sizes in the state. The majority were of less than 50,000 gallons-per-day capacity — serving commercial installations, schools, trailer parks, and motels. There were 142 systems that processed over one million gallons of sewage each day.

Plans for 1,650 public water supply and swimming pool facili-



ties were approved. The average cost of the pool projects was only \$13,400, indicating that many small to medium size pools were being built for apartment complexes, hotels, motels, and trailer or mobile home developments. Swimming pools continue as an important factor in the tourist economy.

A private laboratory made claims of finding mercury in several public water supplies of Dade and Palm Beach Counties. Analyses made by the Division of Health Laboratories could not reproduce the high mercury concentrations reported by the private laboratories. Water supplies from throughout the state were tested and none showed mercury contents of public health significance.

The World of Mosquitoes and Arthropods

Due to an over-abundance of rain between July and September, and an extremely warm

WORLD OF FILMS – The Division of Health has some 1,900 visual aids – mostly motion pictures – available for the health education of Florida citizens.

autumn and winter, the world of mosquitoes, dog flies, and other biting insects was prolonged. The year 1971 proved to be a bad one for mosquitoes. Although the vector of St. Louis encephalitis was found in great abundance, there were no cases of the encephalitis reported.

As the result of the warm weather, temporary mosquito control activities had to be continued into December. Operations were discontinued in normal years in October or early November.

Dog flies appeared on the beaches of West Florida as early as July 22, and the first general outbreak occurred on August 12-13. The pests continued to plague the area until Christmas. Normally cooler weather usually ends their activities about November 1.

Research has indicated that dog flies range 70 miles from their breeding places — showing that the flies can come from farming areas as far away as Alabama. Dog flies were found to be breeding in silage on dairy farms — as well as in sea weed and grass deposits on the shores of West Florida's bays.

The commercial pest control program issued 800 licenses and over 6,000 employees' identification cards. A total of 112 homeowners' complaints were investigated, and 58 unlicensed pest control operators were closed down.

The World of Accidents and Emergency Services

The Division of Health has a responsibility, as part of its public health program, to reduce deaths and injuries from accidents. Seminars were conducted on burn injuries, electrical safety, poison prevention, carbon monoxide poisoning, pedestrian safety, and water safety. These were attended by several hundred persons.

Over 500,000 people are transported in ambulances in Florida each year. The Division of Health's program to provide quality emergency medical services received much attention. Over 2,000 inspections were made of ambulances and over 3,000 ambulance personnel were visited for assurances that they meet training requirements set by law.

Disaster drills were part of the on-going program of health mobilization. County health department personnel participated in drills conducted in Jackson, Columbia, Polk, Highlands, Charlotte, Nassau, Lee, Liberty-Calhoun, Manatee, Pinellas, and Duval Counties. Two drills were also conducted in Monroe County in which Division of Health personnel did not participate.

The World of the Laboratory

Test tubes, pipettes, gas chromatographs, petri dishes, colony counters, and microscopes; and viruses, parasites, bacteria, and many other forms of life make up the world of the laboratory.

The Division of Health's laboratories performed over 3.3 million examinations in 1971, an increase of 7.3 per cent over 1970.

WORLD OF WILD ANIMALS — The Division of Health works mostly with domestic animals or small wildlife — and the diseases transmissible to man. Such exotic animals as tigers and bears are usually seen in the world of the circus.



Increases were noted in syphilis serology, gonorrhea smears and cultures, phenylketonuria (PKU) screening, water and food testing, and clinical, forensic, and radiology chemistry. There were decreases in the examinations for tuberculosis, dairy products, bacteriology, parasitology, and mycology.

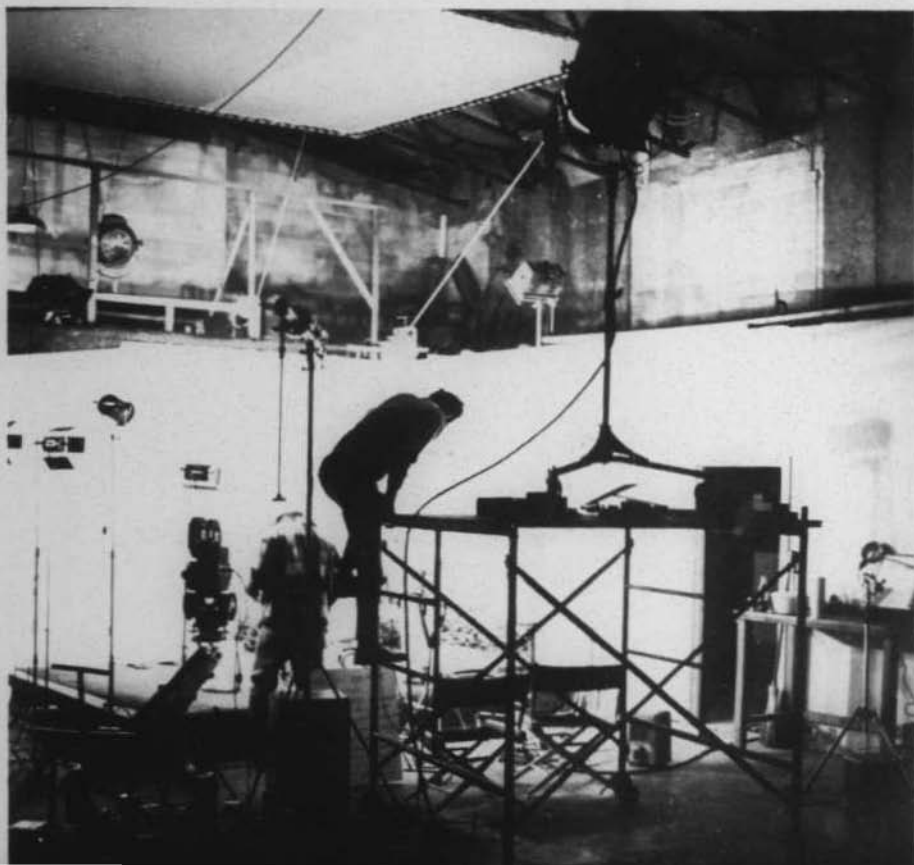
Investigations for salmonella and shigella food poisoning outbreaks in Tampa and Tallahassee accounted for a nine per cent increase in the culture for enteric pathogens.

Demands for PKU Guthrie tests, offered in Miami and

Jacksonville laboratories, rose from 65,407 tests in 1969 to 78,219 in 1971. Further increase is anticipated with the passage of legislation requiring testing of all newborn babies.

Clinical chemistry examinations rose 33 per cent, largely due to expansion of diabetes screening and maternal and child health programs.

WORLD OF CINEMATOGRAPHY — The motion picture studio is a world that fascinates millions of people. The world of viruses and bacteria in the laboratory is equally as captivating.



Of the 819,000 specimens submitted for syphilis, 30,842, or 3.8 per cent, were reactive to the Standard VDRL test. Gonorrhea was isolated from 13.3 per cent of the 53,000 specimens cultured, and 14.2 per cent of the 104,000 smears received.

Of the 4,755 animal brains submitted for rabies examination, the highest percentage of positives were found in raccoons, bats, and foxes. Not one of the more than 1,600 rodents submitted were positive.

The Jacksonville and Miami laboratories participated in the U.S. Public Health Service-sponsored migrant nutrition program inaugurated in late 1970. A total of 43,090 clinical chemistry and vitamin analyses were performed on 15,170 blood and urine specimens from migrant workers in the South Florida area.

A total of 558 laboratory facilities was registered under the Florida Clinical Laboratory Law. Over 5,900 individuals were licensed as laboratory directors, supervisors, technologists, and technicians. Over 2,300 persons were approved to test vehicle drivers for alcohol under the Implied Consent Law and 255 breathanalyzers were registered.

The World of Radiological Health

The world of nuclear energy is a new one that burst upon humanity during World War II. Since then, many peaceful uses of radioactive materials have been developed and there has developed a need to safeguard the public from unnecessary and excessive radiation.

The State Radiological Response Plan was approved by the Secretary of the Department of Administration — acting for the governor — who declared it the official plan for use by all state agencies responding to radiological emergencies in Florida.

The Division of Health was given the authority to develop regulations for lasers and non-ionizing radiation and the transportation of radioactive materials.

A total of 595 licenses were issued to users of radioactive materials in teletherapy units, hospitals, universities, industrial plants, civil defense work, and special nuclear service facilities.

Over 5,700 individuals were registered as users of diagnostic and therapeutic x-ray, and over 10,000 radiation producing machines were licensed.



The sampling of plant, soil, air and other materials around nuclear powered electricity generating stations continued under the financial support of the two electrical power companies.

Industrial hygiene surveys and technical studies were performed in industrial plants to determine the materials used in manufacturing operations and to

HAPPINESS WORLD —
Good health and well-being can make your life as happy as the world of the clown.

establish airborne concentrations of potentially toxic materials to which workers were exposed. Noise, extremes of temperature, illumination, ultra-violet radiation were measured.

Following a report from the U.S. Public Health Service, a survey of furniture refinishing shops was undertaken with the assistance of county health departments to determine the extent that benzene is used as a paint stripping compound. Chemical analysis did not indicate that the chemical was used as commonly as reported.

The World of Education and Records

The Division of Health — by law — is responsible for the health education of Florida citizens. This is a world of books, films, publications and visual aids.

To carry out this task, the health agency operates a medical library and an audio-visual library. It distributes free literature and publications — including this copy of *Florida Health Notes* that you are reading.

The medical library contains some 26,600 bound volumes and journals for professionals of medical disciplines. The audio-visual materials, which consist of 1,963 motion picture prints and other aids, were seen by some six million persons. The most popular subjects were drug abuse, venereal disease, and human reproduction.

Over 460,000 pamphlets were distributed with nutrition, communicable diseases, and maternal and child health the leading subjects requested.

Twelve issues of *Florida Health Notes* were distributed on dog flies, rodents and mosquitoes; safe foods and products; health of migrant farm workers; the radiological health program; laboratory services; hospitals and nursing homes; intestinal parasites; health profile screening programs; emergency medical services; solid waste disposal; safety in the home; and a simplified annual report.

The estimated population of Florida passed the seven million mark. This was a 2.7 per cent increase over 1970. The state gained an average of 15,258 persons each month: 3,473 by natural increase (the difference between births and deaths), and 11,785 by in-migration.

There were provisional figures of 116,453 births and 75,860 deaths. This was the highest number of deaths reported in 25 consecutive years. There were other new records: 75,106 marriages; 43,698 divorces; and 225 annulments. A new low infant death rate was set of 20.6 per 1,000 live births.

The 10 leading causes of death were heart disease; malignant neoplasm (cancer); cerebral vascular diseases (stroke); accidents; influenza-pneumonia; bronchitis-emphysema-asthma; diseases of early infancy; cirrhosis of the liver; diabetes mellitus, and arteriosclerosis.

The total expenditure for public health in Florida was \$48.7 million for the fiscal year ending June 30, 1971. Approxi-

mately \$21 million was spent through the County Health Unit Trust Fund. Federal grants assisted in maternity and infant care, children and youth health services, tuberculosis control, migrant health, family planning, immunizations, and venereal disease control projects.

To carry on the work of public health in Florida, the Division of Health and county health departments had 3,866 employees — seventy-five per cent were on the local level.

The Galaxy of Public Health

Just as the Milky Way is made up of many worlds and stars, public health is made up of many worlds woven into a constellation of related action. These worlds are peopled by public health workers who are concerned about the needs of other people of Florida.

The worlds of public health are as exciting as those of entertainment, fashion, finance, books — and just as important.

The worlds of public health protect you from disease accidents and hazardous products.

They see that your community hospital meets standards; — that the restaurants in which you dine are sanitary and the food is of high quality.

They record the vital statistics you need, promote health education and screening programs to detect and prevent chronic diseases.

The Exciting Worlds of Public Health — of the Division of Health and county health departments — exist for just one purpose — for the benefit of you and your family.

PHOTO CREDITS: Page 152, Walt Disney Productions; pages 148-149, 157 and 160, Ringling Bros. and Barnum & Bailey Combined Shows, Inc.; page 141, Jacksonville Children's Museum; and page 158, Barton Film Company.

Division of Health of the Florida Department of Health and Rehabilitative Services

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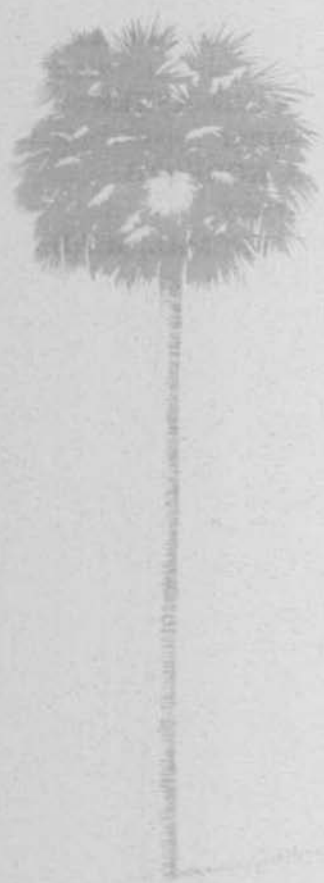
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Florida Department of Health and
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FLORIDA HEALTH NOTES



VOLUME 64 — NO. 7

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Second Class Publication

Childhood Diseases
and
Preschool Immunizations

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stop birth defects

caused by
German
measles

deafness
blindness
bone defects
brain damage

Ask your doctor
about protecting
your family... NOW.



LFP 1199

HEALTHY INFANTS — (Cover photo) — In order to keep children in good health, their parents have them immunized against the common communicable diseases—such as red measles, mumps, rubella (German measles), polio, whooping cough, and tetanus.

EMPHASIS ON BIRTH DEFECTS — The Division of Health and county health departments use this poster in their campaigns for immunizations.

Childhood Diseases and Pre-school Immunizations

* Bobby had the German measles. This seemed like a minor thing, but the sad thing was: He gave the disease to his mother who was pregnant. The baby she bore was blind, deaf, and mentally deficient.

* Dorothy was exposed to the mumps intentionally by her parents. They thought it would be good for her to have them before she grew up. Their plan was perfect — but her father, who thought he had had the mumps as a child, came down with the disease two weeks after Dorothy. He developed orchitis (inflammation of the testicles).

* Charles had red measles. His parents had failed to have him immunized. Complications developed and encephalitis (brain inflammation) occurred. Charles is now retarded. He is doomed to spend his life in seclusion — a closeted victim of a communicable, preventable, and unnecessary disease.

These are three hypothetical cases, but a number of such incidents do occur in Florida every year. In addition, other communicable diseases — such as tetanus, diphtheria, polio, whooping cough — have complications that cause sickness, permanent injury to the individual and death.

In 1971, there were five cases of diphtheria reported to the Division of Health of the Department of Health and Rehabilitative Services. Also reported were 1,818 cases of German measles; 2,365

cases of red measles; 2,995 cases of mumps; 13 cases of tetanus; and 89 cases of whooping cough. These were only the cases reported. There were many others (especially those of measles, mumps, and whooping cough) not reported by parents and physicians.

One sad thing about these illnesses is that they could have been avoided — by immunizations. Despite the efforts of the Division of Health, many children in Florida still have not completed — nor even started — their immunization schedules.

This issue of **Florida Health Notes** will tell you about the major childhood diseases, why children should be immunized against them at an early age, the compulsory immunization law, the Division of Health's and county health departments' immunization efforts to protect the Florida community from communicable diseases; and why it is necessary to have ALL CHILDREN immunized.

Preventing Disease

There are many communicable diseases that can be prevented. Because the agent (bacteria or virus) can be spread from person to person, certain restrictions have been placed on patients with these diseases and upon people with whom they come in contact. These include parents, teachers, playmates, fellow students.

Restrictions have varied from time past. Complete quarantine — the limiting of the freedom of movement of persons who have been exposed to a communicable disease — was practiced until a

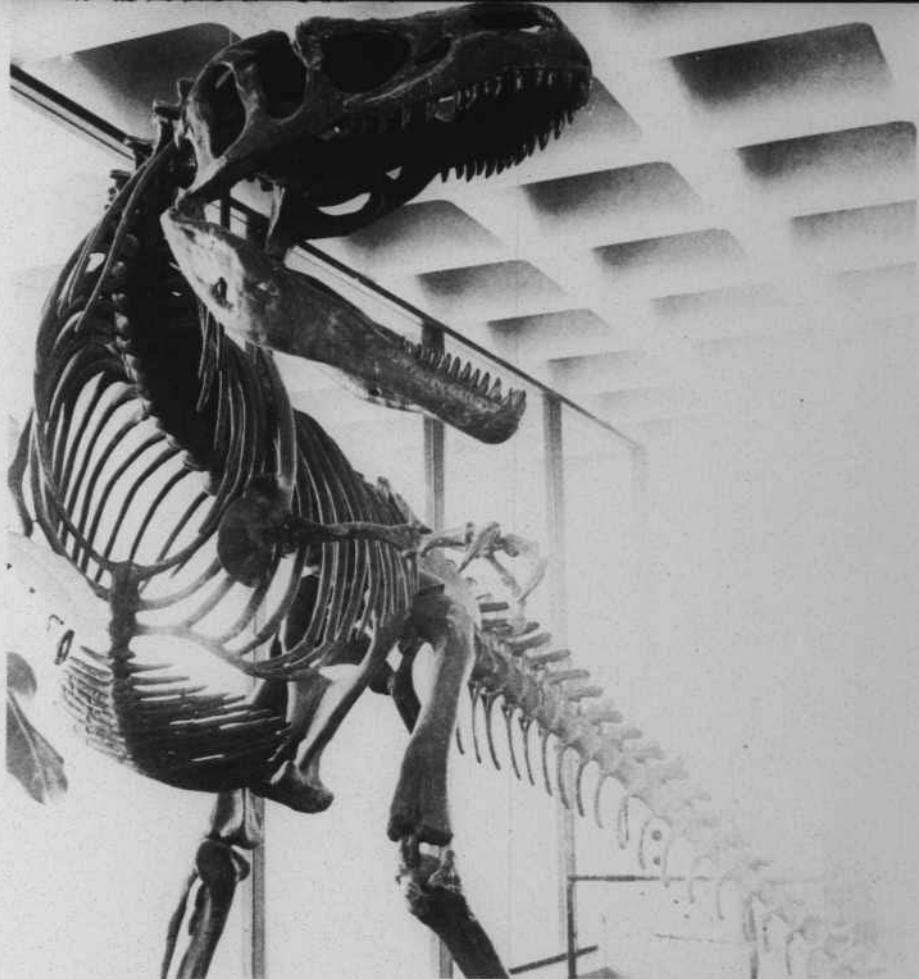
FLORIDA HEALTH NOTES

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HOW DID HE DIE? Fossils have been found with the ravages of communicable diseases. Perhaps this *Allosaurus-antiodemus* (a type of dinosaur) at the Jacksonville Children's Museum died of germs or viruses.

few years ago. Strict isolation of patients for a period of communicability is still necessary in certain diseases — such as smallpox. This type of isolation has little effect on the spread of many diseases, such as typhoid.

Modified quarantine is generally practiced today. This includes the exclusion of children who have a communicable disease from school. Personal surveillance, or close medical supervision, of exposed persons may be carried out to provide prompt recognition of an illness without restricting a person's movement.

Children who are susceptible may be placed in the home of immunized persons to protect the uninfected children from infected portions of the population.

Fifty-two of the communicable diseases are reportable in Florida. When a case is diagnosed (see list on page 185) it must be reported by the attending physician to the county health department. The county health officer, in turn, reports it to the Division of Health.

Many diseases — such as yellow fever, dengue fever, smallpox, malaria — have been eradicated from the state. But these diseases still exist in the world and a constant vigilance must be kept by the Division of Health against their being re-introduced into Florida. Some diseases, such as cholera, typhoid, and yellow fever, are of concern to those people who travel to countries where these diseases are endemic or prevalent.

But the diseases with which the Division of Health, the professional public health worker, and YOU should be most concerned are:

DIPHTHERIA — WHOOPING COUGH (pertussis) — TETANUS — RED MEASLES (rubeola) — GERMAN MEASLES (rubella) — POLIO — and to a lesser extent SMALLPOX. MUMPS is also of importance to children and included in this list but it is not included in the compulsory immunization law. These childhood diseases are the subject of this issue of **Florida Health Notes**.

Epidemics and Man

In all likelihood, diseases have occurred since the beginning of time. Fossils from prehistoric times have been found with dental caries and osteomyelitis of the spine — possibly caused by staphylococci.

Man has been the victim of disease since the beginning of recorded history. Tuberculosis and pneumonia lesions have been found in Egyptian mummies. A smallpox epidemic may have been responsible for the end of the Hittite Empire. Diseases followed



EXCHANGING DISEASES — Childhood diseases are exchanged freely by children on crowded school buses.

man from his beginning in the Fertile Crescent through succeeding civilizations as they developed in France, Italy, Spain, England — and our own United States.

Signs in the sky, stinking mists, divine wrath, rotting coffee — anything that man's imagination could seize upon have been blamed for epidemics. One is tempted to compare the ignorance of our ancestors and parents with our scientific thinking — but our intelligence has not completely erased these communicable diseases from our midst — although this could be done.

In 1832, when cholera arrived in Ireland, runners darted from house to house distributing bits of burning peat — charging each householder to divide his bit among seven other houses, while it burned, and to offer up seven **paters**, three **aves**, and a **credo** in the name of God and St. John to stay the plague.

An orderly slipped a pan of water under a patient's bed in 1935 in a hospital to stop the chill.

Many parents still have their children's ears pierced in childhood to prevent soreness of the eyes.

How many of us still say **Gesundheit** or "God bless you!" when we hear a sneeze?

People burned bonfires, carried coffin nails, and live toads (in a "linnen cloth") to stay the Black Plague. They shot guns in the streets of Jacksonville to kill the yellow fever germs, and carried little bags of camphor in 1918 to offset the influenza. Many parents are as ignorant today of immunizations and why their children should be protected from epidemics as their ancestors were of the reasons epidemics swept across Europe.

Why Immunize?

The reasons that children should be immunized against communicable diseases are simple:

- * to prevent disease;
- * to prevent illnesses;
- * to prevent deaths;
- * to prevent congenitally deformed and retarded children
to protect adults.

When a person is susceptible — he can get the disease. He can become infected.

If he is immunized, he will not get the disease.

A person can contract the disease and build his own antibodies, but he is in danger of developing complications, having permanent mental and physical damage — or even dying.

Immunity is a type of resistance to infection. The level of immunity is related to the number of antibodies in the person's blood stream. The more antibodies — the higher the resistance; the fewer the antibodies — the lower the resistance. These antibodies are acquired by

- * having the disease and taking a chance that you will recover;
or
- * taking into your body a vaccine that contains controlled viruses.



IT'S ON THE BOOKS — The Florida Legislature, in its 1971 session, passed the compulsory immunization law which requires children entering Florida schools to be immunized against certain common communicable diseases. The only exceptions are for religious or medical reasons.

The body develops the antibodies to overcome the weak viruses and thus builds up an immunity to the specific disease.

Mothers who have antibodies against specific diseases pass them along to their unborn babies. But babies lose this type of immunity within a few months and to be fully protected against the childhood diseases, they need to be immunized.

There are different vaccines for each disease, but not all diseases have vaccines. Twenty-eight of the communicable diseases

affecting man can be combated by vaccines. The ones listed above are the most important to children in this country.

Florida Passed a Law

In 1971, the Florida Legislature passed the compulsory immunization law. It is better termed by the Division of Health as a "preschool immunization law."

For many years, actually since 1901, public health officials have urged the adoption of a compulsory immunization law.

The Florida Legislature, in its 1971 session, created Florida Statute 232.032 under the School Health Act, that says:

"The school boards of each district and the governing authority of each school shall require each pupil who is otherwise entitled to admittance to kindergarten or first grade, whichever is applicable, or any other initial entrance into a Florida public or private school, to present a certification of immunization for the prevention of those communicable diseases for which immunization is required by the division of health. Provided, however, that any child shall be exempt from such immunization upon the written request of the parent or guardian of such child stating objection to such immunization on religious grounds, or upon written certification by a competent medical authority that the child should be exempt from such immunization for medical reasons or the division of health determines that according to recognized standards of medical practice any required immunization is unnecessary or hazardous."

This law went into effect June 24, 1971. Because of the brief span of time until the fall school term began, full implementation was not possible for 1971; but it will be enforced for the 1972 term.

A child is certified as being fully immunized if he has received:

* four doses of "DPT" vaccine — diphtheria, pertussis (whooping cough) and tetanus;

* the proper doses of trivalent, monovalent and/or injected polio vaccines;

* one dose of rubella (German measles) vaccine; and

* one dose of rubeola (red measles) vaccine.

Because of the absence of smallpox in the United States, and the risk of reaction or complications from smallpox vaccination, this vaccine is omitted from the required immunizations.

Since whooping cough represents a serious hazard to very young infants, immunization for pertussis should begin at two months of age. Reaction rates increase with the age of children, and therefore, the pertussis vaccine is omitted from the required immunizations for children over six years of age.

ON VACATIONS — Children trade communicable diseases when they meet other children at such resorts as Disney World, Silver Springs — or on an Easter egg hunt.





AT SCHOOL — Communicable diseases can interfere with your children's educational pursuits. It is only wise to have your children immunized.

The Purpose of the Law

Why did the Florida legislature pass the compulsory immunization law?

It is not intended as a law to keep children out of school. Neither is it a law that says a child should be immunized "just before entering school."

The law was passed because not enough parents were having their children immunized — at any time — after birth — before entering school — or during their school years.

Today — many people are "on the go." They move from place to place, take vacations in Florida, visit Disney World and other tourist attractions, crowd the beaches of the Sunshine State. Peo-

ple come in contact with other people; children meet and play with other children; and believe it or not — they exchange communicable diseases.

Transportation with the family automobile is swift today. Mary, who was exposed — unknowingly — to the measles in her home town, sets off on an Easter vacation with her parents. They drive to Florida. Mary plays with the children of other families at the motel, stands next to other children at Silver Springs and Cypress Gardens. Several days pass before Mary develops a fever and then a full blown case of measles. In the meantime, those other children who are not immunized and whom she exposed, travel back home before they, too, develop the measles. No one is to blame, but if Mary had been immunized, she could not have passed the measles on to other children.

Schools, also, are known as places where children trade diseases. It is only wise to make sure that your child is immunized.

What 100 Per Cent Immunization Would Do

Wouldn't it be wonderful if all children were immunized against the common communicable diseases?

Such diseases as measles, mumps, whooping cough, tetanus, German measles, and diphtheria would be eliminated.

Because there would be no susceptible humans for the viruses and bacteria to grow in, they would disappear from the Florida scene.

If all susceptible persons were "eliminated" by vaccines, there would be no places for viruses to grow.

Smallpox is an example of a severe disease that has been eradicated from most of the world. It has been a couple of decades since there has been a case in the United States. The wild polio virus is disappearing from Florida and may soon be gone.

IMMUNIZATION SCHEDULE							
Age	Routine Immunizations						
	DPT	Polio	Measles	Rubella	Mumps	DT	Tetanus
2 months	#1	#1				After age 6 give booster at 10 year intervals	Give booster at time of traumatic injury! *
3 months	#2						
4 months	#3	#2					
12 months			x				
13 months				x			
14 months					x		
16 months	#4	#3					
5 or six years	Boosters						
<p>Measles and rubella are available as a single immunization. Also, measles, mumps and rubella are available as a three-in-one vaccine in a single dose.</p> <p>* NOTE: Tetanus boosters are not recommended more often than one in any 12-month period.</p>							

But don't be too conceited. Don't pin any honors on yourself . . . unless your child has been immunized — completely. There are still thousands of children born each year who are not given their polio vaccine and public health authorities are holding their collective breaths — fearing that there will be a case . . . then two cases . . . and an epidemic will start among those unimmunized children.

The Tragedy of Disease

Man is frequently the reservoir of his communicable diseases. No one would call eight-year-old Roger a reservoir — a carrier of a

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disease — but that is just what he is. He was exposed to the mumps and in a couple of weeks, he will come down with a fever and then the glands on each side of his jaw will swell. In the meantime, he is playing with his friends and he is spreading his mumps viruses widely to every susceptible child in the neighborhood.

There are three types of carriers:

- * the healthy person who harbors the virus or bacteria in his body without his coming down with the disease;

- * the person who is incubating the disease (such as Roger), and may expose others, and then shows symptoms of a full-blown case; and

- * the person who is convalescing. One who has had the disease and is still able to expose others.

Other sources of disease are animals, insects, dust, soil, manure piles, and other things in the environment.

A person may inhale or swallow the organisms; or they may make their way into his body by an abrasion in the membranes of the mouth, stomach, intestines, or puncture in the skin.

Much depends upon the number of organisms that invade the body. If the individual has been immunized, and has developed enough antibodies, the invaders have no effect. If the viruses are too many and the body has fewer antibodies, the person becomes ill.

The mildest type of reaction is the local infection — a blister or boil — that forms because the invasion power of the organism is low, the entry is unfavorable, the dosage of the organism is too small, and the disease-resisting power of the body is too great.

If the body cannot fight off the invasion, general infection can occur. Fever, headache, body aches and/or pain begin. If there is a rash — that appears in time. Unless the infection is overcome; it may proceed into toxemia (poison) which may overwhelm the body and then death can occur.



"I LOVE YOU MOM-MY" — Jimmy loves his mother, but he can give her rubella (German measles). If she is pregnant, she may have a child with birth defects.

2

The Childhood Diseases

Diseases that plague children do not start just before they enter school. These illnesses can begin shortly after birth and the younger the children, the more susceptible they are to disease. Therefore, they should be immunized according to the schedule on page 178.

Diphtheria is an acute infectious disease of the tonsils, pharynx (throat), larynx (voice box), nose or other mucous membrane that is caused by a bacillus. It is noted for the grayish membrane in the throat. Infection is by discharge from the nose and throat of an infected person, or from the skin or other lesions. It is a disease of late autumn, winter, and spring — primarily a disease of unimmunized children under 15 years of age. It may also be found in migrant labor camps and among vagrant and homeless adults.

Red Measles (rubeola) is a highly communicable childhood disease. Probably 80 to 90 per cent of persons living to 20 years of age have had the measles. Without immunizations few persons go through life without an attack. A dusky-red blotchy rash that appears on the third or fourth day after the beginning of the illness is characteristic. The disease can cause deafness, mastoiditis, pneumonia, and brain damage. Transmission is by droplet spread or direct contact with infected persons, or articles soiled by secretions from the nose and throat.

Poliomyelitis is a disease that once spread havoc through communities. Now it is controlled through the use of vaccines against three specific types of polio viruses. Although only one case has appeared in Florida since 1964, the vaccine is included among those required for children. The disease still occurs elsewhere in the United States. The symptoms include fever, headache, gastrointestinal disturbance, a general malaise, and stiffness of the neck and back. Complications may include paralysis of the limbs — or even the whole body. Such malfunctions of the individual may appear from even an apparently mild illness. Infections are transmitted by the feces (body wastes) of infected persons or sometimes by articles soiled with throat discharge.

German measles (rubella) is a mild disease that has a rash of variable character — sometimes resembling that of measles, scarlet fever, or both. Before the rash appears there may be slight symptoms of a cold. Next, there will be some swelling and tenderness of glands behind the ears and down the back of the neck. The rash then appears, first on the face then on the trunk of the body. It lasts only about three days. Fever, if present, accompanies the rash and is rarely very severe. The disease is spread by droplets or direct contact with infected patients or indirect contact with articles soiled by discharge from nose or throat. While mild in children, the disease is a hazard to pregnant women because of the risks of malformation of the developing babies.

Smallpox — The last outbreak of smallpox occurred in the United States in 1949 in the Rio Grande Valley. Once a scourge in Florida, immunizations have eradicated the disease but there is danger of it being brought into the country from other parts of the world. Today, there is less emphasis on smallpox vaccinations and

they are no longer required by the Division of Health. The disease starts with sudden onset of fever. A rash appears that passes through various stages of vesicles and pustules and leaves extra deep scars for life. The disease is fatal in 30 per cent of the cases. Source of the infection is respiratory discharges of the patient, lesions of the skin and mucous membranes, or contaminated materials.

Tetanus is an acute disease induced by toxin (poison) of a bacillus growing at the site of an injury. Characterized by painful muscular contractions, primarily of the muscles that control the movements of the jaw, and neck muscles. The disease is nicknamed "lockjaw." Fatality averages about 50 per cent of the cases — varying according to the person's age and the length of the incubation. The immediate source of the infection is the soil, street dust, or animal and human body wastes. The tetanus spores enter the body through an injury, usually a puncture wound, a burn, or even a trivial or unnoticed wound — such as from a rose thorn. The disease is not communicable from man to man — as are the other important childhood diseases, but because the spores are widespread in Florida's soil, the immunizations are urged for every child and adult.

Whooping cough (pertussis) is an acute bacterial disease involving the respiratory system (trachea, bronchi and bronchioles). The initial stage has an irritating cough which gradually becomes violent and spasmodic — producing a whooping sound. This usually occurs within one to two weeks and it may last for a couple of months. In general fatalities are low, but fully 70 per cent of the deaths that do occur are among children under one year of age. Children under six months are most susceptible. The infection is spread by direct contact with an infected person by droplet spread, or by contact with articles soiled by such persons. Predominately a childhood disease, the highest number of cases occur among children under seven years of age.

Mumps is an acute viral disease of sudden onset characterized by fever and swelling and tenderness of the salivary glands. The source of infection is the saliva of infected persons and it may spread by droplets and by direct contact with articles soiled by the infected persons. Woman's ovaries and man's testicles are occasionally involved in individuals past puberty. Encephalitis is an occasional complication of mumps. While deaths are rare, outbreaks are



PROTECT YOUR CHILDREN — The tetanus spores are found frequently in Florida soils. Children should be protected from the disease (also called "lockjaw") which they can easily contract on the playground.

frequent and serious in groups of young adults in colleges and military bases.

Vaccines to Prevent Illness

It is tragic that in spite of ample and readily available supplies of effective vaccines against these common communicable diseases, such infections continue to cause illness and death. Diphtheria,

whooping cough, tetanus, measles and mumps all are unnecessary conditions — yet they continue to occur with frightful frequency. All are essentially 100 per cent preventable through the simple procedure of immunization.

Although a whooping cough vaccine was developed in 1938 — and its efficiency in preventing the occurrence of the disease has been repeatedly demonstrated — one-fifth of Florida's infants fail to receive their protective coverage during the first year of life. Over the last 10 years, an average of 300 cases a year have been reported to the Division of Health.

Diphtheria vaccine first became available in 1923 at a time when this infection was among the most dreaded of childhood diseases. Despite the effectiveness of the vaccine, general acceptance was slow and reported illnesses did not decline until the 1940's. Still Florida records a number of cases each year. Available data suggest that some 20 per cent of Florida's infants less than 18 months of age have not been immunized.

The tetanus vaccine has been available since 1933. Yet probably more than 40 percent of Florida's population is susceptible to the disease. The vaccine provides essentially 100 per cent protection against death, and almost 100 per cent assurance against infection. Interestingly, unlike all the rest of the common infectious diseases, having a case of tetanus and surviving does not give a person immunity against subsequent attacks.

Comparable stories can be recited for measles, rubella, and mumps. Theoretically, with adequate personnel and appropriate financial support, these diseases can be eliminated from the human race — but data are not available to assert this with certainty.

Measles, rubella and mumps are viral diseases. The viruses depend upon the human host for survival. Immunization prevents reproduction of the viruses. Adequate levels of immunization in people can provide for the total elimination of these viruses.

However, as long as a few cases remain — and susceptible persons are in a position and location to provide transmission of the

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Diseases Reportable in Florida

Diseases to be reported by name, address, county, age, race, sex and date of onset:

Anthrax*
Aseptic Meningitis
Botulism*
Brucellosis
Chancroid
Cholera*
Dengue
Diphtheria*
Dysentery, Amebic
Encephalitis, Viral
Gonorrhea
Granuloma Inguinale
Hansen's Disease
(Leprosy)
Hepatitis
(Infectious & Serum)
Leptospirosis
Lymphopathia Venerea
Malaria
Menigococcal Infections

Plague*
Poliomyelitis
Psittacosis
Rabies
Relapsing Fever*
Rheumatic Fever
Rocky Mt. Spotted Fever
Salmonellosis
Shigellosis
Smallpox*
Syphilis
Tetanus
Trichinosis
Tuberculosis
Tularemia
Typhoid Fever*
Typhus Fever
(Epidemic Type)
Unclassified Mycobacteria
Yellow Fever

Diseases to be reported by number of cases only:

Chickenpox
Diarrhea of the newborn*
Food Poisoning*
German measles
Hookworm
Impetigo, Infectious*
Influenza

Measles (Rubeola)
Mumps
Ophthalmia Neonatorum
Ringworm of Scalp
Scarlet Fever
Strept, Infections (other)
Whooping Cough

*Denotes diseases that should be reported to the county health officer immediately by telephone.

Underlined diseases are those preventable by vaccine.



WHY IMMUNIZE? — A public health nurse tells a mother why she should have her children immunized. This is a part of the Division of Health's preschool immunization program.

viruses — the diseases will continue to occur and continued high levels of immunity will be demanded.

Total eradication of any one disease will require maximum levels of immunization, prompt identification of cases, and, the successful separation of cases from those who have not had the disease.

Pertussis, diphtheria, and tetanus are all bacterial diseases and present problems of control and eradication different from the viral diseases. Immunization provides the only assurance against disease and death. Tetanus lives in the soil; whooping cough and diphtheria are obligated to live in humans. Neither are particularly affected by immunization of the host. The vaccines provide protection against the effects of growth of the organisms and not against the organisms themselves.

At any point in time, two to five per cent of the population have diphtheria organisms in their throats. Such persons, called "carriers," have been the source of sporadic cases and outbreaks during recent times. The prevention or eradication of the carrier

state in humans is not medically, epidemiologically, or economically feasible. Maintenance of immunity is the only deterrent to disease and death.

Contrasting with the viral vaccines, the immunity produced by bacterial products is relatively short-lived. Periodic boosters are necessary. For both tetanus and diphtheria, present recommendations call for boosters at 10 year intervals throughout life.

As we have previously said, whooping cough is a disease primarily limited to young children. The most effective use of the vaccine depends upon beginning immunizations of infants at two to three months of age. The disease is not a serious illness in adults and older children. There is evidence that the present whooping cough vaccine cannot be administered safely to adults. Booster doses of this vaccine are not generally given to children after they pass the age of six years.

Total control of illness and death due to tetanus, pertussis and diphtheria depends upon immunization of the susceptible and maintenance of protection by periodic booster injections of vaccine. For persons over six, there is a combined tetanus-diphtheria vaccine which omits the pertussis portion.

Immunizations Should Begin Early

As previously stated, there was not sufficient time between the compulsory immunization requirement becoming law and the opening of school to complete plans for the complete immunization of schoolchildren entering school in 1971. Therefore the children were admitted to school without their immunizations being completed.

In spite of considerable efforts on the part of the county health departments and the Division of Health to provide special clinics and school immunization programs, less than 60 per cent of the 158,000 kindergarten and first grade students had completed their immunizations by March 1 of this year.

It is apparent that if schoolchildren are to be immunized, the process must begin sometime before the children enter school. **Immunizations should begin when the children are two months old.**

To reach the goal of immunizing all children before they enter school, considerable efforts have been made by the Division of Health, county health departments, Department of Education, county school superintendents, and schools.

Guidelines have been prepared; additional clinics — as well as special clinics — have been held in most counties. Some counties are planning special immunization teams to provide immunizations for those children applying to school without completed schedules.

Considerable efforts are being made at state and county levels to provide publicity to reach and inform parents of immunization requirements prior to their children entering school.

Many of the children in Florida are immunized by their private physicians. But people who cannot afford a family doctor may go to the county health department clinics. The Division of Health, county health departments, and public health workers are concerned mostly with the children of medically indigent families.

Many children are not immunized because

- * the family lacks transportation to the clinics;
- * the parents cannot take off from work to take the children to the clinics; or
- * the parents are indifferent to the fact their children need to be protected from these childhood diseases.

The Newborn Immunization Program

Chapter 232.032 of the **Florida Statutes** is not a "school immunization law." It is a preschool immunization law because it requires "each pupil who is otherwise entitled to admittance to kindergarten or first grade . . . to present a certification of immunization . . ."

The Division of Health has an immunization program by which the parents of newborns are contacted by the county health departments by mail, telephone, and home visits by the public health nurse to urge parents to take their babies to their family physician



START AT AN EARLY AGE — A mother has her infant immunized at the proper age.

or to the county health department clinic to get their immunizations.

The Division of Health recommends that every child be given its immunization as scheduled on page 178.

Some parents, however, never seem to get the word.

Some of those who do may ignore it. A father may say, "I don't care. My kids don't need those shots. I never had them and I don't see why they need them. Let them get the measles and mumps. It'll be good for them."

But should his son contract rubeola and suffer complications — such as encephalitis (brain inflammation) and become mentally retarded for life, or,

* let his daughter give German measles to his pregnant wife, who then bears a blind baby; or

* his four-month-old baby have whooping cough and die, the father would wonder, "What happened?"

Timing is important. The American Medical Association and public health officials do not believe that immunizations generally are effective in newborn babies. Mothers who have developed antibodies — either by having the disease itself, or by immunizations — pass this immunization (protection) on to their babies. Although it is effective only for a short period of time, when the newborn is given the vaccine too early in life, the maternal antibodies in his bloodstream interfere with the vaccine and the baby fails to develop lasting immunity. He really has not been immunized at all. This gives a false sense of security. The child has been given the vaccine — but he is still susceptible.

Some people believe that it is necessary to immunize only girls against rubella — in order to protect them from contracting the disease in future years. This leaves the boys unprotected. They cannot produce congenitally deformed children because of rubella, but they can give the disease to their mothers — who can have miscarriages, or deformed babies.

It's Time to Immunize

Florida's schools will open for the 1972-73 school year in less than two months. If your children have not been immunized, now is the time to start the protection against measles, diphtheria, whooping cough, tetanus, polio, mumps, and rubella. And now is the time to start those preschoolers on their immunization schedules. Your children are 100 per cent susceptible unless they are 100 per cent immunized. To delay such immunizations could be inviting disease, illness, possibly complications and/or death.

The Division of Health and county health departments recommend that most children should be immunized beginning at the age of two months. But from YOUR viewpoint — your children should receive the necessary vaccine to protect them from the common childhood diseases.

NOW is the time to have your children immunized whether or not they are about to enter school. That's what the preschool immunization law is all about.

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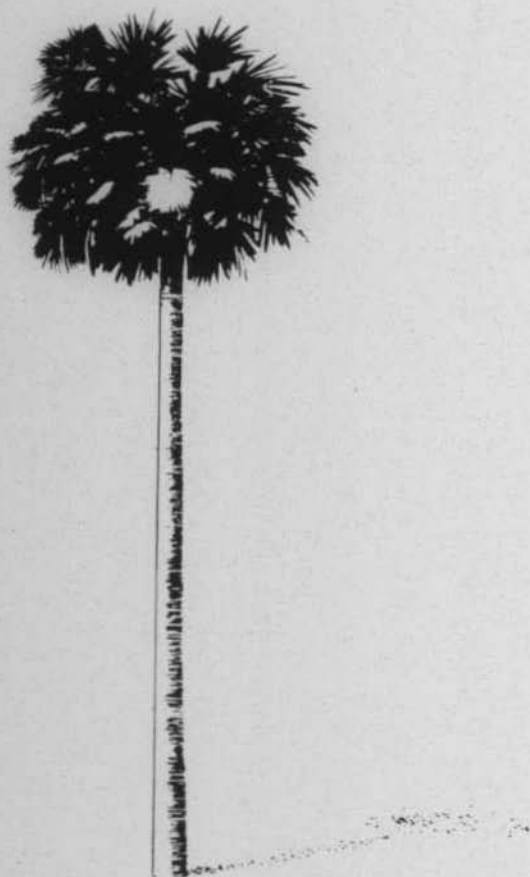
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**Division of Health
of the
Florida Department of Health and
Rehabilitative Services**

Post Office Box 210 Jacksonville, Florida 32201

A collage of nine black and white photographs documenting the operations of a shrimp processing plant. The images show various stages of the process, from raw shrimp to finished products, and the roles of different workers. Top left: A large pile of raw shrimp, with a building labeled '40214' in the background. Top middle-left: Three men in white shirts and dark trousers standing in a hallway. Top middle-right: A worker in a white shirt and hat processing shrimp on a table. Top right: A man in a striped shirt and glasses holding a small object, possibly a shrimp, while talking to another person. Middle left: A worker in a white shirt and hat standing next to a large pile of raw shrimp. Middle center: A worker in a white shirt and hat processing shrimp on a table. Middle right: A worker in a white shirt and hat processing shrimp on a table. Bottom left: A worker in a white shirt and hat processing shrimp on a table. Bottom center: A worker in a white shirt and hat processing shrimp on a table. Bottom right: Two men in business attire, one in a suit and one in a white shirt, looking at a large tray of processed shrimp.

FLORIDA STATE LIBRARY



PROTECTING YOUR HEALTH (Cover photo)

- Sanitarians are engrossed with many aspects of food sources and preparations, cleanliness, and the environment to make sure food service establishments meet standards set by the Florida Administrative Code. A sanitarian (above and left) checks a Delta Airline 747 at Miami's International Airport; another plane arrives for unloading.

PROTECTING YOUR HEALTH

....through Food Hygiene...

...Inspections....

...Training of Food Service Workers

...Laboratory Services...

The Inspection

The scene was a Florida restaurant. An evaluation of the food establishment was in progress. Joe Smith, a food hygiene program coordinator, and Mike Jones, a sanitarian - both from the county health department - were talking to Mr. Bradford, the restaurant manager.

"There are many things commendable about your restaurant," Joe Smith checked off the items on his clipboard. "Work areas are clean. Everything is properly stored up off the floor in the refrigerators and storerooms. Your dishwashing machine is doing a fine job with the final rinse at the proper temperature."

Mr. Bradford answered, "We're trying to correct those things you suggested."

"I wonder if some improvement could be made in the work of the waitresses serving the customers. I noticed that one girl was scooping up ice with a glass. Another stacked bowls of soup she was serving. That busboy with the long hair needs to wear some kind of hair restraint," Joe noted a few problems.

"Perhaps you can hold some training classes for my employees," Mr. Bradford suggested. "And tell them what they need to know about sanitation."

"We're conducting some food service sanitation short-courses at the county health department auditorium starting next week," Joe answered. "The classes will be conducted each Wednesday afternoon for four weeks, starting at three o'clock. We would like to have your employees attend."

"I'll see that they come and pay them as if they were working." Mr. Bradford said.

"Good! Now - before we go, we would like to make a few suggestions that could improve your operations and cut your food costs. If you could use those food leftovers promptly, you could save some money. You probably lose 30 to 40 per cent of your left over meats by not using them in casseroles or meat loaves. That hole in the corner of the kitchen ceiling needs to be repaired, the filters over your stoves could stand another cleaning, and the outside door to the storeroom needs a rubber sealer against the floor. That will keep out any rat that would try to get in." Joe was busy checking off items on his list. "By the way . . . has your pest control man improved his service lately?"

"Yes, he now comes every other week and is doing a fine job," Mr. Bradford replied.

"You know that this restaurant inspection is very important in protecting your customers' health," Joe said. "There are many owners and managers in our county that are helpful, but there is a handful who resent our interest in protecting the people and tourists from food - borne illnesses."

"I'm sure some managers would try to get away with murder if you weren't around to look behind the counters. Ol' Nick himself knows what you find behind some of them," Mr. Bradford added.

"We're trying to line up a short-course for managers and owners as soon as possible. And then we hope you folks will take over the training of your own employees in many areas of sanitation," Joe said.

"I know what you mean. It's hard to keep good workers in this business and the turnover is tremendous. Some type of training is

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THE INSPECTION - County health department sanitarians visit kitchens, bakeries, and storerooms during their evaluations of food service establishments.

needed. Many waitresses come in off the streets, especially during the winter months, asking for work. But frequently we have to train them in how to serve," Mr. Bradford said.

"Yes," Joe commented. "And once you have trained them in how to serve the public and we have trained them in proper sanitation, they move on to another city."

"Well...that's life," Mr. Bradford added.

"We have a few more stops to make . . . so we'll see you next month. See what you can do to get that hole fixed." Joe led the way out the door to his car. Mike Jones followed. As the two men drove on to their next appointment, they discussed the good and bad points of the evaluation of Mr. Bradford's establishment.

The Scope of the Food Industry

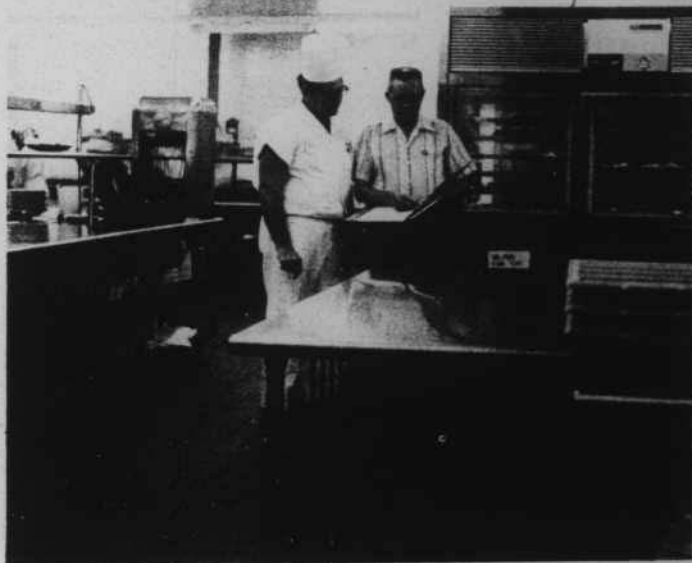
Tourism is the leading industry in Florida. Food and beverage businesses are a large part of this industry and contribute a great deal to the comfort and pleasure of both tourists and Florida citizens. The business of eating and drinking has always been - and still is - one of the principal occupations of mankind. Florida's restaurants can seat over a million patrons at one time. Millions of meals are served daily in the variety of Florida's food and beverage establishments.

The popularity of eating out and the necessity of eating meals away from home have resulted in a number of changes in our way of life. The 28 million tourists visiting Florida need places to eat. In large business and metropolitan centers, the majority of workers eat lunch in a food service establishment. The employment of women in business and industry adds to such patronage. The use of the automobile has resulted in the development of drive-ins, highway cafes and the refreshment stands. Advertising promotions by the food and beverage industry and the social pleasure and convenience of dining out with family and friends have made the restaurant an important factor in our economy.

With all of these millions of meals served daily - and the hundreds of thousands of people working with foods, there is a need for a state agency to work with the industry to make certain that

- * foods are pure and protected from dirt and spoilage;
- * the restaurant personnel is free of disease; and

'THESE ARE THE DEFICIENCIES' - A county health department sanitarian goes over the list of needed corrections with a chef.



* the establishments are clean and sanitary.

The Division of Health of the Department of Health and Rehabilitative Services has long been in the program of protecting Floridians and tourists from food-borne illnesses. Florida statutes charge the health agency with the control of communicable diseases and a number of these diseases can be transmitted by food and water.

Early editions of **Florida Health Notes** carried information to its readers on "house to house inspection of water supplies," "scientific studies on food," and proper food hygiene. A Food "Handlers" Training Program was begun in November 1947 and during the first 14 months of operation enrolled over 28,000 students in 47 short courses. These students took a basic six-hour course in food sanitation.

County health departments were urged in those days to set up local training programs for food service workers. This is the same type of operation used in Florida today. Fourteen counties conducted food service training programs in 1971 with some 7,000 workers completing the courses.

The Sunshine State has 25,053 eating and drinking establishments; 1,389 food processing plants; 347 shellfish and crustacea plants; 10,111 groceries and meat markets; 109 abattoirs, and 1,421 other types of food establishments. These employ hundreds of thousands of workers. County health department sanitarians

made over 209,000 visits to these businesses in 1971 as part of the food hygiene program.

This issue of **Florida Health Notes** will tell you how the Division of Health and county health departments protect you, your family and your friends from food-borne illnesses through their food hygiene programs; the diseases that you can contract from food and water; the training of food hygiene program coordinators who supervise the programs in the county health department; and the carrying out of training of field sanitarians, restaurant managers and owners, and food service workers who are engaged in food industry. We will also discuss the things that food service workers can do to protect your health, and the services of the laboratory that give scientific support to the food hygiene programs.

Millions of Meals - Danger of Disease

With millions of meals served every day in Florida and hundreds of thousands of people working with food, public health professionals are amazed that there were not more than 2,138 cases of food poisoning, salmonellosis, and amebic dysentery reported in Florida in 1971. There probably would have been many more cases of food-borne illnesses if the Division of Health and county health departments did not have their food hygiene programs.

The average Floridian is ill with diarrhea one and one-half days a year — much of it thought to be caused by food poisoning. This is time lost in productivity. It means that seven million Floridians lose over 10.5 million days annually from their work - due to diarrhea. This amounts to over 28,800-person years. To the average Floridian it means that he spends about 105 days during his lifetime of 70 years sitting in the bathroom - on the toilet seat - with diarrhea.

What are the diseases you can acquire from food? What are the symptoms?

* **Food infections** - These are caused by **Salmonella** and some other germs which are found in foods contaminated by unwashed hands, rat feces, insect droppings, and sometimes by partially cooked meats. You can have sudden onset of abdominal pains, diarrhea, frequent vomiting and fever. Deaths are uncommon.

* **Food intoxication** - This is a disease caused by poisons given off by the staphylococcus and some other bacteria that have contaminated such foods as meats, custards, salads, and dressings. The bacteria are introduced into the foods from sores, boils, or nasal discharge from food service workers and permitted to grow by improper storage temperatures. In the affected person there is an abrupt violent onset with severe nausea, cramps, vomiting, severe diarrhea, prostration, subnormal temperature, and lowered blood pressure. Diagnosis is usually made through the identification of several cases which have similar histories of foods eaten and short intervals between eating the food and the onset of symptoms.

* **Shigellosis** - This is a disease caused by the bacteria, **Shigella**, in foods or water contaminated with human feces, by poor personal hygiene (unwashed hands), and flies. Poor personal sanitation is usually the cause. Occurrence may be more frequent in warm climates. Symptoms are characterized by bloody diarrhea, fever, vomiting, and cramps.

* **Botulism** - This highly fatal, but rare, disease is caused by poisons given off by **Clostridium botulinum** sometimes found in improperly prepared home-canned meats and foods, and very rarely in commercially processed foods. It is characterized by weakness, dizziness, headaches, constipation - followed by paralysis involving the central nervous system. Two-thirds of the patients die of respiratory or cardiac failure within three to seven days.

* **Amebic Dysentery** - This is a disease caused by **Entamoeba histolytica**, from contaminated water, hand-to-mouth transfer of fresh feces, contaminated raw vegetables, and by flies and soiled hands of food service workers. The patient has abdominal discomfort, diarrhea alternating with period of constipation, or chronic diarrhea with mucus and some bleeding, or acute dysentery with much blood and pus.

The Department of Health and Rehabilitative Services, through its Division of Health, is charged by law to protect the health of Florida citizens. This includes control of food-related diseases. The responsibilities were assigned to this agency because public health professionals are the best qualified to control situations potentially dangerous to the public health.

Over the years a myriad of city, county, and state health functions have been forged into a single non-duplicating program which currently has under control most of the catastrophic problems, such as mass epidemics, short-life expectancy, food and

water-borne diseases, and disease-carrying vectors, which once plagued Florida.

Problems have risen with efforts of some non-health agencies to assume responsibilities in health areas. This presents a two-fold danger:

- * non-health agencies do not have the competency to make vital, perhaps life-or-death decisions related to human health; and

- * should these agencies be provided with duplicating professional competency, the situation would compound an already critical shortage of high-priced professional manpower.

The Food Hygiene Program Coordinator

The basis of the state-wide food hygiene program is the food hygiene program coordinator. He is a specially trained county health department sanitarian who has the responsibility for seeing

CERTIFIED - When Joe Smith has demonstrated his competence as a food hygiene program coordinator, he is issued a certificate. He must be re-certified in three years.



that the food hygiene program in his particular county is operated smoothly and in harmony with the state program.

Joe Smith, the food hygiene program coordinator in C. County, was educated as a teacher. After several years in the classroom, he decided to try another profession and went to work as a sanitarian with his county health department. He attended a 12-week basic course in sanitation at the Division of Health headquarters in Jacksonville. This included classroom work and field training. Later he participated in in-service training courses that were offered to county sanitarians from time to time. He also completed several correspondence courses from the U. S. Public Health Service.

One time Joe and his wife were taken violently ill after eating in a restaurant and since then he has been interested in food hygiene and how to protect the public. He was selected food hygiene program coordinator by his supervisor, the director of the environmental health, and county health officer because of his leadership ability and his skill in working with people.

Joe received special training in the food hygiene program. This was done in several two-day sessions conducted by approved Public Health Service Food Sanitation Rating Officers from the Division of Health's state and regional offices. These consultants have attended special training courses conducted by the U. S. Public Health Service and certified by the federal agency.

During the special training, Joe was given instruction in interpreting and enforcing the **Florida Administrative Code**, record keeping, training of restaurant managers and employees, utilizations of the laboratory, legal aspects of a food hygiene program, and epidemiological and investigational procedures in a food-borne outbreak. Part of the latter instruction included the solving of a theoretical food poisoning outbreak. Instruction was also given in collecting and submitting swab tests of utensils and dishes, and the important reasons for making an inspection.

In order to qualify as a food hygiene program coordinator, Joe also carried out joint inspections with the state rating officer of 10 food service establishments - picked at random. His inspection results had to compare favorably with those of the rating officer's.

After he had successfully passed the course and field work, Joe was certified as a food hygiene program coordinator for three years. In order to be re-certified, he must take additional instruc-

tion and make another series of inspections with the state rating officer.

There are 50 food hygiene program coordinators in Florida (see list on page 206) certified by the Sanitation Section of the Division of Health's Bureau of Local Health Services. Their educational and professional backgrounds vary. Some have been school teachers; others have been chemists, biologists, pharmacists, veterinarians, and physicists. All have had years of previous experience as county health department sanitarians, and have received special training in food sanitation.

Putting the Training into Practice

Joe Smith has been a food hygiene program coordinator for two years and has the responsibility for maintaining a food hygiene program at a high level of efficiency in his county. He has secured the cooperation of most food establishment owners and managers, and the backing of his director of environmental health, county health officer, and board of county commissioners.

His medium size county has a population of 100,000 with 400 eating and drinking establishments, a university, and several governmental office buildings. Of the 10 sanitarians in the environmental health office, Joe supervises three who devote their time to the food hygiene program. Their responsibilities also include milk and frozen dessert sanitation.

Joe strives for professionalism in his inspection program. His expertise in the field of food hygiene has won the respect of restaurant owners and managers, and created good public relations for the county health department.

His training sessions with the three sanitarians are more informal than those in the larger counties. He frequently makes field inspections with them, going over procedures from time to time, sitting down and talking about their inspection techniques, and discussing the goals of the food hygiene program and how they could be reached.

The sanitarians know what each item on the inspection sheet means and how to make the proper interpretation. Prior to their going out to make an evaluation, the men go over past inspection

sheets of the establishments they are to visit, become thoroughly familiar with the problems involved, and what areas need special scrutiny.

Joe instructs his men to be business-like in making their evaluations. He tells them to make their inspections, discuss their findings with the manager, and establish time requirements for correcting the deficiencies. Joe believes that sanitarians should ask questions and look at the work from new angles. They frequently ask, "Why do you do it this way?" and are able to learn new ideas from even the lowest busboy.



IN ACTION - In cooperation with a sanitarian, a food hygiene program coordinator (in coat) makes an inspection of a large food service establishment. (1) He discusses the establishment's problems with the managers; (2) talks over a deficiency with the sanitarian and a manager; and (3) points out the need for a rubber sealer on the bottom of the outside door.



Florida's Food Hygiene

Following is a list of the food hygiene program coordinators in Florida's county health departments, as of July 1, 1972. Not all counties have these coordinators although all county health departments have food sanitation program.

COUNTY	FOOD HYGIENE PROGRAM COORDINATOR	CERTIFICATE EXPIRES
Alachua	Jason C. Outler, Jr.	July 31, 1974
Baker	James A. Rhoden	November 30, 1973
Bay	John B. Wainwright	November 30, 1973
Brevard	Juan A. Tomas	November 30, 1973
Broward	Robert C. Miller	November 30, 1973
Calhoun	Alva Hall	November 30, 1973
Citrus	Lester A. Dangan	January 31, 1975
Charlotte	Thomas Norby	November 30, 1973
Clay	Richard C. Powell	July 31, 1974
Collier	*** John W. Meek	November 30, 1973
Collier	*** Wilton E. Sloan	July 31, 1974
Columbia - Gilchrist	Stephen L. Knight	November 30, 1973
Dade	Luis M. Benavides	July 31, 1974
DeSoto	Emmery A. Wuthrich	November 30, 1973
Dixie - Lafayette	John L. Lloyd	November 30, 1973
Duval	Frank L. Maxwell	July 31, 1974
Escambia	W. M. Fletcher	November 30, 1973
Flagler	Eugene C. Holly	July 31, 1974
Franklin	C. E. Van Tassell	November 30, 1973
Gadsden	Robert K. Dunaway	November 30, 1973
Gulf	F. P. Trammell	August 31, 1974
Hamilton	Marvin M. Rodgers	November 30, 1973
Hendry - Glades	Ernest L. Willoughby	November 30, 1973

When making their evaluations, the sanitarians discuss their recommendations for improving the restaurant operations with the managers or owners. Not only are the recommendations given, but the sanitarians also explain the medical and bacterial reasons

Program Coordinators

Hernando	Harold Bolesta	July 31, 1974
Hillsborough	* Phillip H. Jones	November 30, 1973
Hillsborough	Carl B. Prisoc	July 31, 1974
Holmes	Rupert Padgett	November 30, 1973
Indian River	Curt Cram	July 31, 1974
Jefferson - Wakulla	G. Rhett White, Jr.	July 31, 1974
Lee	Charles Martindale	November 30, 1973
Leon	Joseph C. Ditty	November 30, 1973
Madison	Donald W. Eads	November 30, 1973
Manatee	** James L. Keys	November 30, 1973
Marion	John E. Swanson	July 31, 1974
Martin	Lewis Anthony	November 30, 1973
Monroe	*** John O'Neill	November 30, 1973
Nassau	Dolvin Foreman	November 30, 1973
Okaloosa	Hubert L. Lindsey	November 30, 1973
Okeechobee	Walter Taylor	July 31, 1974
Palm Beach	Richard P. Murphy	November 30, 1973
Pinellas	William C. Henderson	November 30, 1973
Polk	John H. Dame	November 30, 1973
Putnam	Ralph W. Crosby	November 30, 1973
St. Johns	Donald R. Kaufman	November 30, 1973
Santa Rosa	Edwin G. Howe	November 30, 1973
Sarasota	* H. R. Chamberlin	November 30, 1973
Sumter	James E. Palmer	July 31, 1974
Suwannee	A. D. Young	November 30, 1973
Taylor	Marner Smith	July 31, 1974
Volusia	Lewis Anthony	November 30, 1973

* Promoted to different positions in county health departments.

** Transferred to Central Office, Division of Health, Jacksonville.

*** Resigned.

for the sanitation procedures required. They stress that the inspections and corrections are not to please the county health department and Division of Health requirements, but that corrections are needed to protect the public's health.



TRAINING - A county health department sanitarian frequently has to improvise when he talks to food service workers. He sometimes needs to darken a room with blankets when he uses a projector, and

In addition to evaluating the various aspects of the food service establishments' operations and sanitation, the food hygiene program coordinator is also responsible for approving the plans for new construction or renovations of food service places. This includes review of plans, inspection of the buildings under construction to make sure proper sanitary facilities are installed, and proper plumbing placed - including the correct location of grease traps and floor drains.

In some counties, evaluations of food and drink establishments are required at the time of renewal of beverage licenses or change of ownership. Also, some county health departments monitor microwave ovens on request as part of the food hygiene program.

Training the Food Service Workers

The food hygiene program coordinator, such as Joe Smith, is also responsible for the training of restaurant personnel in sanitation. Top priority should be given to the training of managers and owners so they will know how to train their workers in sanitary procedures. Then chefs, cooks, hostesses, waitresses, busboys,

dishwashers, janitors should be trained. Emphasis is made that the primary objectives are to serve the customer safe, attractive, appetizing, and nutritious foods. At the same time, the patron's health should be safe-guarded by providing food that is wholesome and free of any substances or agents that would make him ill.

The food hygiene program coordinator and sanitarians, in their training programs, use films, filmstrips, slides, handouts, and any type of material that will get their message across. Topics in the sessions include personal hygiene, safety, fire protection, microbiology, prevention of food-borne illnesses, protection of food from contamination, proper methods for washing and sanitizing dishes, utensils and equipment; insect and rodent control, housekeeping, and waste disposal practices. Participants in the training sessions are given opportunities to ask questions about any aspect of food sanitation. Several sessions are usually held at weekly intervals and certificates are awarded to food service establishment employees who complete the course.

Throughout the training programs the emphasis is placed on the main objective of the food hygiene program: To protect the public against food-borne illness.

The state and regional consultants are available to Joe Smith and the other food hygiene program coordinators to help with their training programs for county health department sanitarians, and food establishment managers and employees. Each consultant

... uses samples of hair, dust, air, and fingerprints to show the presence of bacteria in the environment and how rapidly they grow. This demonstration often makes a powerful impression on food service workers.





ALL ESTABLISHMENTS - Sanitarians visit food warehouses, one-man food service operations, vending machines, and crab-picking plants in their food hygiene program. These inspections are all aimed at protecting your health.

has a master's degree in public health. The consultants participate in training sessions for local sanitarians, and help with curricula for sessions with food service workers. They also help Joe to obtain training materials, such as audio-visual equipment, 35mm slides, motion picture films, and leaflets for handouts. Sometimes Joe has to seek assistance from national food and training organizations to obtain training aids.

The Scope of the Food Sanitation Program

Forty-eight of Florida's 67 county health departments have food hygiene program coordinators who are responsible for the food sanitation programs in their counties, which have more than 90 per cent of the state's food service establishments. Food hygiene program coordinators have resigned in a few counties. Other county health departments have not taken advantage of this special training offered by the Division of Health.

However, county-wide food hygiene programs are conducted by each of the 67 county health departments - regardless of the fact that they do not have food hygiene program coordinators.



These programs are conducted by qualified sanitarians under medical direction at the local level with the Division of Health providing complete laboratory services and supporting technical assistance by state-level sanitarian consultants, medical, epidemiologists, and other scientific specialists.

Local food sanitation activities cover all types of food service establishments, including, restaurants, soda fountains, cafeterias, school lunchrooms, hospitals, nursing homes, and common carriers, such as ships, airplanes, trains and buses. Also included are food processing plants, food warehouses, groceries and meat markets, vending machines, abattoirs, shellfish and other food establishments.

Public health physicians, nurses, sanitarians, and laboratory workers are constantly on the alert for signs of communicable diseases. Information is obtained by the reporting of unusual incidence of disease by physicians and other sources, and through investigations of suspected food-borne diseases by county health officers and their staffs. Assistance is provided by the epidemiologist from the Division of Health. The latter is a physician especially trained in control of preventable diseases.

Such an investigation frequently involves the procurement of vomitus and stool specimens from the patients for laboratory examinations. The public health nurses are used extensively in securing these specimens. The sanitarian, together with the public health physician and/or public health nurse, investigates foods

or food handling practices related to the occurrence of food-borne illness. Special examination of food service workers for the detection of carriers of disease is also done.

Appropriate examinations of specimens from patients and of food and water samples are conducted by the regional public health laboratories operated by the Division of Health.

Protecting the Patron's Health

As previously stated, the major objectives of the food hygiene program is to protect you, the reader, your family and friends, from diseases carried by foods and drinking water. The managers and owners of food establishments are not sanitarians. Neither do they want to be. But the following facts can help them protect YOUR HEALTH.

Managers and owners sometimes have to be reminded that sanitation is just one side of a triangle that makes up the food service business. The other two sides are Quality Foods and Employees' Service.

Frequently when business is bad, sanitation is the first to be cut. The janitorial staff is the first to go. As a result, the restaurant has dirty refrigerators, storerooms, floors. Even though the dishwashing machine is one of the most expensive pieces of equipment in the place, the manager sometimes will hire an inexperienced man off the street to run the dishwasher.

The most frequent complaints about restaurants are dirty dishes and utensils, improper serving practices, insects, lack of hair restraints, and chronic coughs of food workers.

But the customer, who is frequently the victim of poor sanitation, rarely sees the food preparation and serving areas. He judges the establishment largely on the basis of what he sees around him. He may know little about conditions in kitchens or workrooms, but he is conscious of the surroundings in which he is served. Floors or floor coverings, condition and repair of walls and ceilings, light and ventilation, upkeep of counters, booths, tables, and chairs are a part of the food sanitation program that he sees. Even the grounds surrounding the establishment are

How to Lose a Customer

One restaurant that served a buffet failed to keep its foods hot enough. When a sanitarian who was a regular customer of the establishment mentioned to the manager that the chicken a-la-king tasted sour and the steam table was not hot enough to keep it from spoiling, the manager maintained there was nothing wrong with the food. The sanitarian no longer eats at the restaurant. Not only was the manager endangering the health of the public, but he lost a \$40-a-month customer. No restaurant could afford to lose many customers and remain in business.

judged by the customer and should be included in the evaluation of the food service establishment.

Quality food is also a part of the food business picture. Sanitation standards have been developed to reduce to a minimum the opportunities for micro-organisms to gain entrance and multiply in food. A single germ, in 24 hours, will produce under favorable conditions 281 trillion other germs - each one capable of doing the same. Fortunately a great many of these bacteria die off by themselves and a great many others do no harm. If this were not true, we would be ill all of the time.

Most disease germs grow best at body temperatures and in moisture. High temperatures usually kill them; freezing does not kill them but keeps them from multiplying. Sunlight kills them; and they breed in the dark. Their favorite breeding places are milk and milk products, eggs, meats, shellfish, poultry, water, salads, sauces, dressings and gravies. This does not mean that other foods may not become contaminated. Dangerous results may come from careless selection or improper cleaning, preparation, storage or service.

The safety and wholesomeness of food is a basic requirement for the protection of the consumer's health. This is a basic factor in the evaluation of the food service establishment.

Foods must be from approved sources. They must be protected from contamination and spoilage during handling, packaging, storage, transit, and while being prepared and served. Non-commercially, hermetically-sealed, nonacid or low acid foods are prohibited because of a history of causing botulism. All foods should be wholesome and free of spoilage, adulteration and misbranding.

Only pasteurized fluid milk and fluid-milk products can be used or served in Florida. Dry milk may be reconstituted in the food service establishment for cooking purposes only. Milk and fluid-milk products for drinking purposes must be purchased and served in the original, individual containers in which they were packaged at the milk plant, or served from an approved bulk milk dispenser.

Perishable foods should be stored at such temperatures that will prevent spoilage. Potentially hazardous foods must be kept at 40 degrees Fahrenheit or below - 150 degrees and higher - except when being prepared, served, or on display for service. If served hot, the temperatures of such foods should be kept at 150 degrees.

The food hygiene program coordinators and sanitarians have to continually watch for signs of illness among the food establishment personnel. No person should be working in a food service place who has a communicable disease, is a carrier of such a disease, or afflicted with boils, infected wounds, sores, or acute respiratory infections.

Too often diseases that are transmitted through foods originate from an infected food service worker. Boils and sore throats are sources of organisms which cause staphylococcal food intoxications. These are the most common type of food-borne diseases in the United States. It is the responsibility of both management and employees to see that no one who is affected with a disease in a communicable form works in any area of a food service establishment.

All employees should wear clean outer garments, maintain a high degree of personal cleanliness and conform to hygienic practices while on duty. Hand-washing facilities should be available in areas where needed and should be used before starting work, after visiting the toilet, or after hands have been used for any purpose in which they become soiled or contaminated.

The use of tobacco while preparing or serving goods may contaminate the fingers and hands with saliva and may promote spitting, thereby transmitting disease organisms to food or food-contact surfaces.

Insanitary and unsightly personal practices, such as scratching the head, placing the fingers in or about the mouth or nose, or in-



'THOSE FILTERS NEED CLEANING' - A sanitarian points out to the restaurant manager and chef one deficiency that needs correcting. Most managers are very cooperative with county health departments and quickly correct the shortcomings.

discriminate and uncovered sneezing or coughing, will also contaminate the food and adversely affect the consumer. Careless handling and unnecessary contact with soiled surface of dishes, glasses, cups, tableware, or napkins may expose employees - and patrons - to needless health hazards.

No food service establishment is so perfect that its house-keeping could not be improved.

Poisons and pesticides must be stored away from foods. Accidents can occur when insect powder looks similar and is mistaken for flour, baking powder, or dried milk. Over 230 persons were made ill in one situation in the Western United States when roach powder was mistaken for powdered milk and mixed with scrambled eggs. Forty-seven persons died.

Fruits, vegetables and other food products - whether in sacks or boxes - must be stored high and dry where rats, dirt and moisture cannot get at them. Food containers should not be left open.

Foods, beverages, containers, utensils, glassware, dishes and silverware should be properly stored. Special care must be taken

IN-FLIGHT KITCHENS - A sanitarian watches food trays being assembled for airline passengers. Thousands of meals are prepared each day in these kitchens.



**EVEN THE SUR-
ROUNDINGS** - A food
hygiene program coor-
dinator, who also makes
inspections of food es-
tablishments, makes a
note of a rat hole and
debris outside a restau-
rant.



to prevent contamination from overhead pipe-leakage, from water collecting on overhead plumbing, from sewage back-flow, or flooding of the premises.

Floors, walls, and ceilings of areas where foods are stored and prepared, utensils are washed, employees dress, and toilet rooms should be of smooth, non-absorbent material and constructed so they will be easy to clean. All places where foods are served should be easily maintained.

Each shift of the food service establishment, before it goes off duty, should clean its assigned area. The entire establishment should be thoroughly cleaned during hours when it is closed.

These are just a few of the major aspects of food hygiene as practiced by many food service establishments. However, the training of food service workers in basic sanitary conceptions is the most important point in preventing food-borne disease outbreaks.

Laboratory Support

The public health laboratories of the Division of Health provide a quiet, competent, efficient, behind-the-scenes support for

the food sanitation program. These facilities, during 1971, performed over 111,000 examinations on dairy products; 268,000 tests of drinking and swimming pool waters; 12,800 tests for sanitary quality of foods; 5,400 examinations for food poisonings; and 2,620 tests of utensil swabs.

Tests performed routinely by the laboratories include:

- * aerobic plate count which indicates how clean the food service establishment was in which the foods were prepared and how carefully the food was handled during and after preparation;

- * a staphylococcus count which indicates foods contaminated by persons with a drippy nose, boils, running sores, or an open infection;

- * a coliform count which indicates poor personal hygiene (lack of hand washing after using the toilet);

- * swab test, which indicated how clean the dishes were, whether the wash water was hot enough, and the dish washer was doing a good job;

- * plate count for **clostridium perfringens** and **bacillus cereus** which produce toxins that make people sick; and

- * a new test for **vibrio parahaemolyticus** - a common bacteria similar to cholera which is found in raw sea foods.

All for You!

What's the reason for this food hygiene program? It's for you!

It is for your benefit that the Division of Health, Department of Health and Rehabilitative Services, trains food hygiene program coordinators. It's for your health that sanitary inspections are made of restaurants, cafeterias, vending machines, school lunchrooms, drive-ins, hamburger stands, and the variety of food service establishments. It's for you that the public health laboratories perform hundreds of thousands of tests annually on food and water specimens.

We are confident that we have kept many people from becoming ill by training food service workers to know proper sanitary procedures.

We are happy that we have this food hygiene program. We hope it makes life more pleasant for you.

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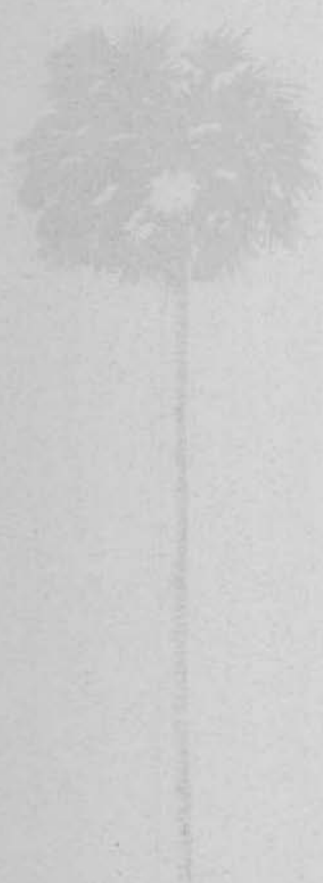
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FLORIDA HEALTH NOTES



Community Health Workers, Aides
and Volunteers in Florida's
Public Health Program

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COMMUNITY SERVICE
(cover photo) - The community health worker greets a family at the door of the "out-reach trailer." She raps on doors (above) searching out health problems among the residents of the community.

The Use of *Community Health Workers, Aides and Volunteers in Florida's Public Health Programs*

A knock sounded on the door of Mrs. Brown's home. She opened it and there stood a young woman with a pad in her hand.

"I'm Lucy Jones from the health department. I'd like to talk to you about your kids. Have they been immunized against disease? It will keep them from becoming sick from the many kids' illnesses."

"No! Not all of them have been immunized," Mrs. Brown said. "Won't you please come in?" She welcomed the community health worker into her home.

Lucy Jones is one of a number of community health workers, aides, and volunteers who serve in many county health departments as part of the public health team. They work in clinics and hospitals, private homes, and in the community. They serve in migrant health, personal health services, family planning, health education, immunization, maternal and infant care, and other programs of the Division of Health of the Department of Health and Rehabilitative Services. There are also men who work in the environmental health field as sanitation aides.

In addition, there are many people who volunteer to assist county health departments in such diverse programs as one-day mass immunization campaigns; diabetes screening programs; tuberculosis control; vision, hearing and cardiovascular screening; and many other programs. In many county health departments volunteers also serve as clinic receptionists.

In the past we have told you about the work of the public health workers - the physicians, public health nurses, laboratory technicians, sanitarians, sanitary engineers, and clerks. We seldom have talked in **Florida Health Notes** about community health workers and aides who are of great service to public health pro-

grams; but a number of Florida county health departments have carried on pioneer work in the outreach worker concept. These workers relieve the professionals of routine activities. Their services give the professional staff members the opportunities to carry on more effective services to Florida citizens and visitors.

This issue of **Florida Health Notes** will tell you about these workers, aides, and volunteers, and how important they are to the programs of the Division of Health. We will tell you why they are needed in the health programs, their qualifications, and duties, and how they improve the services of Florida's public health programs.

An Early Community Health Worker

Sam Joey, a migrant, was in the public health clinic for diagnosis and treatment. He had diabetes and was in need of medication. But Miss Collins, the public health nurse, had difficulty in making him understand when he should take his medicine, and the reasons why he should take it on a regular schedule.

"Sam, have you been taking your medicine?"

"No, M'am, I don't reckon."

"Why not, Sam. Don't you realize you must take your medicine to keep from going to the hospital?"

"Well, M'am. I don't feel sick no how. I'm getting along all right."

"Sam, you have diabetes."

"Yes, M'am."

"The physician told you that you had to maintain a proper diet and take your medicine if you are going to keep well."

"Yes, M'am."

"Has the nutritionist told you about the food exchanges?"

"Yes, M'am."

FLORIDA HEALTH NOTES

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"Do you understand them?"

"Yes, M'am."

"What did you have for dinner last evening?"

"Yes, 'um."

"Sam, what did you eat yesterday?"

"Well . . . Ah had hog back, grits, turnip greens and a coke."

"You know that's not the proper diet for a diabetic. Here's what you should eat . . ." and Miss Collins handed him a leaflet.

WHAT SHOTS DO THE CHILDREN NEED? - The community health worker checks over the family's immunization cards.



Miss Collins was trying to communicate with Mr. Joey, but she failed because of a vocabulary barrier, custom difference, and a cultural gap. Not all of the public health nurses have the same problem as Miss Collins, but it can happen to those who are not familiar with migrant life.

Also, Miss Collins realized that Mr. Joey was wary of her. He was suspicious of any "outsider." He was saying what he thought she wanted him to say. She could not obtain the information she needed.

This difficulty in establishing effective communications with patients of another culture has always existed between public health workers and the recipients of their services. Public health professionals have found it difficult to communicate with migrants, Seminoles, Miccosukees, and many other groups, including the whites and blacks of the lower socioeconomic groups who are not of the same cultural background.

In an attempt to overcome this cultural barrier to the migrant health program, a "liaison worker" was made a part of the public health program. Mattie, the first one to be hired, was in her early thirties, married, and the mother of three children. She had completed high school and had worked as a clinic aide in a local hospital prior to becoming the "liaison worker."

Mattie was a member of the community in which the migrants lived. She was their neighbor. She went to church with them; shopped with them in the community store. She had her hair done in the local beauty parlor. Mattie was accepted as a part of the community because that was her home.

She was a part of the public health team and therefore, she could identify with the professionals. She was able to convince the migrants that "my folks at the clinic" (public health staff) were genuinely interested in the migrants and would treat them "nice." Because she was part of this public health team, the migrants identified her as some one who could help them. They brought their health problems and other needs to her. The county health department was able to cope with some of the needs; others were referred to other agencies.

LISTENING TO A PATIENT - As a public health nurse gives an immunization, a clinic aide converses with the patient.



Mattie also served as a source of information for the public health team. She was able to tell the team what the migrants' needs were. The information found through the non-professional, social relationship built up between the "liaison worker" and the migrant community was relatively inaccessible to the county health department's professional staff.

Service With a Purpose

That first "liaison worker" was not the first non-professional worker to be used in county health department programs, but she led the way to a wide use of community health workers in Florida's public health programs. Many county health departments find that they work well in clinics, homes, and the community.

These people

- * go from home to home finding people who are in need of medical help;
- * assist public health nurses and physicians in clinics;
- * work as home health aides for people who are confined to their home; and
- * serve on outreach teams that do case finding and health education in the community.

The educational background of the community health workers and aides vary. Many have finished high schools; others have only completed the elementary school level, or junior high school. Some

plan for the future and go on to junior college and receive associate degrees in nursing. Others finish their college work.

The workers, however, must have an interest in people, be able to meet and talk with people, and be capable of performing duties for which they are trained. Many community health workers can take a great deal of responsibility; in some counties; clinic aides do much more technical work under proper supervision.

The community health workers, clinic aides, home health aides, and those in special projects, are trained by the public health nurse, physicians, and/or consultants from the Division of Health. They perform their work under close supervision of the professional public health staff.

An important characteristic of the community health workers is that they have a close relationship with their communities from which they come. This is invaluable to the county health departments.



COUNTING PILLS - A clinic aide counts out medication that a physician has ordered for a patient.

KEEPING SUPPLIES -
Another clinic aide
stacks the supply closet
of a clinic with
new material.



The community health workers and aides go through a period of training to fill their needs and equip them for their tasks. However, if they are over-trained they can lose their identity with the people of their community and there is danger that their opinions and observations may change. They may lose their liaison with the community and thus become "too professional" as far as their neighbors and friends are concerned.

The clinic aides and community workers feel that they are doing an important service to their community. They believe in the personal approach to the delivery of health services - the face to face contact with the public health services' recipients. The workers find there is a need for more aides in the community, not only to find people who fail to keep clinic appointments, but to answer questions the people in the community have. They find that every one has problems. People are always in need of financial help, rodent control, plumbing repairs, garbage collection. The problems found in rural areas are the same ones that exist in the cities.

Work of the Clinic Aide

"Place your arm right here and we'll put this cuff around it . . . fasten it here, and I'll pump this thing up."

"If you'll come this way and stand on these scales, I'll weigh you . . . you've gained a couple of pounds."

"Now, come in here and the doctor will be right in."

Shirley Smith had worked as a clinic aide in the county health department's maternal health clinics for a couple of years. Because she was specially trained, she had taken many blood pressures, weighed a number of pregnant women, and prepared them for the prenatal examinations.

Shirley, herself, had once been a recipient of medical services of the clinic. One day - when she had brought in one of her eight children for treatment, she had discovered that the clinic supervisor was looking for an aide to assist in the clinic. The work would be non-technical; she did not need a high school education. Shirley applied for the job and got it.

At first she set up the examining rooms, arranged instruments, and cleaned up the rooms after the patients. She was taught how to operate the water sterilizer and autoclave, and how to clean and sterilize the equipment, supplies and instruments. She assembled the instruments and supplies, stored laundry and medical supplies away in closets, collected dirty laundry, and performed other duties around the clinic.

As she learned more about the operations of the clinic, Shirley started keeping records, staying with patients during examinations, posting visits of patients, assisting clinic physicians, nurses, and technicians by recording specimens. She was taught how to take temperatures and blood pressures, do hemoglobins, test urines, and eventually to take chest X-rays. (In many counties clinic aides are not given such wide responsibilities.)

Shirley assisted in the vasectomy clinic, prepared sputum containers in the chest clinic, weighed babies in the pediatric clinic, and helped in the family planning clinic by mingling with the patients, allaying fears and relating to the public health nurses any problems the patients may have.

She was able to relieve the public health nurses of much of the routine activities of the clinics so they could have more time for pre-examination conferences and for counseling the patients afterwards. Frequently the clinic aide acts as interpreter between patient and the professional staff. Sometimes



PERSONAL CARE - A home health aide receives instruction from a public health nurse on the care of a bed-ridden patient.

the aide could get more information out of the patients than the public health nurse or doctor because she had the patients' confidence.

Services in the Home

"How are you feeling today, Mr. Cooper?" Ginny Thomas greeted her patient as she walked into the bedroom.

"Somewhat better," said the elderly man in the bed. "Did the nurse say how long I could sit up today?"

"We're glad to see you. John's been talking about your coming for the last two hours. He wants to get out of that bed," the patient's wife smiled at Ginny.

"Just as soon as we do a few things. Such as take your temperature give you a bath, and a back rub. Then you can get up."

Ginny went into the nearby bathroom, washed her hands, and then slipped into her apron which she had taken from her bag.

The home health aide had been coming from the county health department four hours each day to assist Mr. Cooper with recovery from major surgery. The purpose of her visits were to help her patient recover sufficiently to resume a normal life. She had started with him when he first came home from the hospital. The physician in charge of the case had recommended the home nursing care - a service provided by the county health department.

Mrs. Cary, the public health nurse, and the physician had planned the nursing care for the patient. Mrs. Cary had gone over each step of the nursing procedure with Ginny, pointing out the various things she could do.

Ginny assisted the patient with his personal hygiene - bath, backrub and shave each day. She noted the condition of the dressing on the incision - to make sure it was clean. The bandage could be changed only by the public health nurse. The home health aide took the patient's temperature, changed the bed, dusted, and vacuumed the bedroom; and helped the patient to take care of his personal habits.

Ginny had taught Mrs. Cooper to prepare the proper meals for the patient, and sometimes assisted in preparing them. Now that Mr. Cooper was on the path to recovery, she helped him out of bed to sit in a chair. Today, he would be up for four hours; soon she would be assisting him to walk around the room. The public health nurse, who closely supervised Mr. Cooper's care, reviewed the patient's progress, and from time to time gave specific instructions on nursing care. Ginny was able to give routine personal care because she was able to stay longer in the home than the public health nurse.

When she served on non-Medicare cases, Ginny had taken care of children while their mother was in the hospital and the father at work. She had done light washings and ironing for patients, accompanied ambulatory patients on walks, and served as a guide, companion and aide to many patients. She also obtained household supplies that were needed, and ran errands for elderly couples.

In preparation for her work as a home health aide, Ginny had attended a two-week training course in which she had been instructed on family life and composition, household duties, nutrition and food management, personal care and hygiene, ethics, and conduct of the home health aide.

Door to Door

"Quetal! Como esta usted? Tiene usted inumnizados sus muchachos contra las enfermedades infecciosas?"

"Non, Yo no los tengo inumnizados."

"Permitame, hablarle de inumnizacion."*

** English Translation*

"Hello, How are you? Have your children been immunized against communicable diseases?"

"No, they have not been immunized."

"Let me tell you about immunizations."

Rita Santos, the community health worker, greeted the woman as she swept the sidewalks in front of her home. Part of Rita's work with the county health department was to go from door to

CLINIC DUTIES - Clinic aides, under special circumstances, are given extra responsibilities. She may stay with a patient as she is examined by a physician (left), or she may be taught how to draw blood specimens (right).



door in her Spanish-speaking community finding children who have not been immunized against communicable diseases, and persuading their mothers to take them to the clinic.

Rita was also vigilant for other health problems. In one home she found a grandmother in need of medical care. In other homes she found a blind baby who needed attention, a pregnant teenager in need of medical supervision, a boy with an infected leg. She also was told about plumbing problems, garbage problems, personal problems.

She was a "contact person" who could help people obtain assistance through various state and county agencies. Many people were referred by other residents to Rita with the statement to "see about getting a little help."

During her door-to-door visits, she

- * secured basic health information from families;
- * imparted memorized information pertaining to general health and health habits of the families;
- * attempted to interest families in family and community health problems;
- * explored ways to make people aware of community health resources; and



TENDER LOVING CARE - A Gray Lady volunteer confers with a public health nurse about a sick child who visits the elementary school's health room. The school health aide functions exactly as the Gray Lady.

* carried back to the county health department information that the public health staff could use in planning its program.

As part of the family planning program and maternal and infant care project, other community health workers were assigned to visit the local hospitals each day to obtain information pertaining to newborn infants. During the visits, they had the opportunity to talk with mothers, explain basic birth control information, and prepare the patients for the public health nurses' visits.

The community health workers visit laundromats, beauty shops, and other places where women gather to set up small exhibits and talk about general health, immunizations, and family planning. They urge pregnant women to seek medical care.

Some mothers, after they have been in the family planning program for a time, express their gratitude to the community health workers for their new lease on life. They were happy because they were not continually pregnant, had the children they could support, and had better standards of living.

Rita and other community health workers visited beauty shops, barber shops and other places where community residents gather to distribute health leaflets - especially designed for people of limited reading ability. They observed the interest in the materials and noted any related comments. When there were questions that they could not answer, they referred the people to the county health department. From time to time, proprietors of business places where leaflets were distributed contacted the community health workers and requested additional leaflets.

The county health departments find that community health workers operate well in home and field situations. Their activities are flexible. They can adapt to most situations. They do a very good job of selling the services of the county health department to the community.

But not all past contacts with the community have been pleasant or normal. One community health worker was chased by a large dog; another was visited by a squirrel monkey while sitting in her car writing up her reports (a considerable amount



INFORMATION - The health education aide prepares signs informing community residents of the coming of the out-reach trailer.

of time was spent in catching the monkey); and a third worker, while making a home visit to a paralyzed man, discovered that his wife had died in the next room. (She contacted her supervisor and then the sheriff's department.)

The community health worker, using her language, customs, and abilities, carries out a vital service by going into homes to find out why a clinic appointment was broken. In this face-to-face confrontation with her neighbors, the community health worker is able to find out that they are seeking answers to many problems that plague them. Many times she is able to help them; at other times, they can be referred to other agencies.

Tender Loving Care

"What's the trouble, May? Don't you feel well?" Mrs. Patterson, the school health aide, smiled at the little girl as she entered the Whispering Pines Elementary School's health room.

"I've gotta tummy ache," the second grader whispered.

"Here, drink this glass of water and lie down here. This is the second time in two days that you've been in to see me," Mrs. Patterson said. "Now, dear, what's the matter?"

"I don't feel good and besides we're going to have a test in . . ."
The little girl crumpled against Mrs. Patterson's matronly shoulder in tears.

As a school health aide, Mrs. Patterson is paid by the board of public instruction; but supervised by the public health nurse from the county health department. She maintains the health room, administers simple first aid - as set down by the county health department and local medical society, and gives Tender Loving Care as needed.

If a child makes repeated visits to the health room, has sores, boils, ear aches, or some other complaints, the school health aide reports these to the public health nurse during her weekly visits.

OUTREACH TEAM - The outreach team works in areas of the community where migrants and groups of indigent people live. It is composed of the community health worker, the public health nurse, the health educator, and the driver.



If a child has a rash, sore, or a condition that the aide thinks is contagious, she telephones the public health nurse who makes a special trip to the school to investigate the complaint.

If a child is hurt on the playground, or has a serious accident, the school health aide calls the school principal. He notifies the parents. If they cannot be reached, the principal will take the child to the hospital or doctor's office in his own car.

Mrs. Patterson is responsible for maintaining the health room. However, if there are no children needing her supervision, she is sometimes used as an office aide or to supervise children enroute to the lunchroom.

Getting the People Out

"I'm Dorothy Johnson from the county health department. I'm taking a survey of the area to find out how many kids have

ENVIRONMENTAL SURVEY -

A sanitation aide takes a sample of water from a public water system. When possible, such samples are taken directly from the faucet of the kitchen sink.

(Opposite page) He makes notes of a lot strewn with bottles, papers and other debris (left), and one overgrown with weeds (right). The owners of these properties will be asked to clean up the lots.





had their shots. Have your kids had theirs?" The health education aide knocked on the door of the house. It was opened by a young woman.

"No, M'am. But I reckon they need 'em." The woman leaned against the door jamb.

"The trailer from the county health department will be at the corner between 2 and 4 tomorrow afternoon. We'd like to have you bring your kids out for their shots."

"Well... Ah... don't know..."

Dorothy waited. It did no good to rush the woman. Sometimes it took quite a while for people to express themselves . . . to talk about their problems. It was Dorothy's duty to listen and see if she could help.

Her major activity consisted of going into migrant camps and areas where people lived to tell them of the coming of the outreach team. She also told them what services they would receive at the trailer.

But frequently the people had more pressing problems than immunizations for their children. They had problems of

- * finances - not enough money to meet high prices;
- * housing - too many people in a room;
- * food - not enough to keep away hunger.

The health education aide is always faced with the problems of getting people to take advantage of the services available

from the county health department. Working under the supervision of the health educator, the aide uses pamphlets and posters to announce the coming of the outreach trailer.

"You can tell people they really need the services — but they won't come out," Dorothy said. "But the more they learn - the more they cooperate. It takes just one or two to start then the others follow. The same thing applies in birth control. One or two persons will try it . . . others then come and they find out that with less kids they have a better life."

The Outreach Team

The community health worker knocked on the door of the migrant house in the early evening. A man came to the door.

"I'm Ruby James from the county health department. The health trailer that I told your wife about yesterday is here. If you want your children to have their shots, please bring them to the trailer."



THE VOLUNTEER - A mother, who serves as a volunteer in an elementary school, does hearing screening. She was taught this routine work by the public health department nurse and a consultant from the Division of Health.

"Okay, Hey! Ma, the trailer is here," the man turned and called to his wife in the next room.

The trailer from the county health department, parked beneath the trees, served as headquarters for the outreach team - which was composed of a public health nurse, health educator, community health worker, and a driver. The trailer, frequently parked in front of a group of migrant homes, was all ready set up for business when it arrived on the scene of the afternoon's outdoor clinic.

Ruby, the community health worker, served as the vital link between the health team and the residents of the area. She was the first to contact the patients in their homes - telling them that the outreach trailer was coming and then seeing that they visited the public health nurse who gave primary care and immunizations. Patients with more complicated problems were referred to other agencies or clinics by the public health nurse.

The first of the team to contact the patients was Ruby who interpreted the services available. She obtained a brief medical and social history of the patient, performed simple laboratory procedures, such as hemoglobin determinations and urinalysis, and obtained blood specimens.

She used her rapport with the residents of the community in making home visits, assisted in determining the families' needs, and served as liaison in the giving of treatment.

Aides in Environmental Health

"I'm Roger Jackson from the county health department. Did someone here call about a dog bite?"

"Did you report there is a dead dog in the vacant lot next door?"

Mr. Baldwin, do you own the empty lot on West 12th Street? . . . 1217, I believe! We have been receiving complaints about the trash and weeds on it. We would like to see it cleaned up."

There are many community health workers, home health aides, clinic aides, and health education aides who work in per-



RECEPTIONIST - A volunteer in a small county health department clinic checks on the immunization record of a small boy.

sonal health services. There are also a number of non-professional men who assist with the environmental health programs. These sanitation aides have been employed for many years by the county health departments, but their work has always been performed under the supervision of the sanitarians. They are frequently responsible for carrying out routine activities that do not require expert judgment. This relieves the professional sanitarians of repetitive work and allows the county health departments to carry on more effective environmental health programs.

The duties of the sanitation aides are varied. They collect samples of water, sewage and other materials in connection with field investigations for compliance with the **Florida Administrative Code**.

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Their most valuable contributions to the activities of the county health department are the preliminary investigations of nuisance complaints — such as overflowing sewage, scattered garbage, obnoxious odors, and dead animals. They report their findings to a professional sanitarian for disposition.

They conduct routine inspections and investigations in connection with animal bites, rodents control, and flea eradication, and give the information to their supervising sanitarians for action.

Many times they participate in field activities associated with sanitary surveys of private premises.

The Volunteer Workers

While there are a number of paid workers in public health programs, there are many who "work because we enjoy it." This band of volunteers includes people who participate in mass screening and immunization projects, special programs, weekly and monthly clinics, and school health rooms.

Volunteers come from Parent-Teacher Associations, civic clubs, auxiliaries of medical societies, junior woman's clubs, pilot clubs, voluntary health organizations, extension homemakers' clubs, and individual citizens. If this army of volunteers were to go on strike, some of the smaller county health departments would be hard pressed to carry on their public health functions.

Some of the volunteers have had previous medical training; most of them have not. They come from all walks of life — housewives, physicians' wives, retired men and women, teenagers.

In the mass immunization campaigns, volunteers busy themselves filling out forms for the people who come in for their immunizations. They act as receptionists, comfort children, assist the public health nurses and physicians, help bring children to the immunization centers.

The Division of Health's and county health departments diabetic detection programs use many volunteers from pilot clubs,

nurse, carry out interviews of children, bring youngsters to the screening rooms, keep records, and supervise the children. They are frequently trained to carry out the initial screening tests, but they do not make any of the decisions as to the results of the tests.

Tuberculosis control programs use volunteers as receptionists in chest X-ray screening programs.

In clinics of small county health departments, volunteers do much of the paperwork or assist the public health nurse or physician. They are frequently found as an answer to the demand for manpower by those county health departments that cannot afford clinic aides.

In some counties, volunteers work as Grey Ladies in school health rooms to assist children who are sick. These volunteers are trained by public health nurses in first aid, and by school personnel in school policies regarding the sick child. The volunteers often serve as comforters of children, bandagers of cuts and bruises, and confidants of youngsters with problems. In some schools the women are paid by the school boards for their services.

The Advisory Councils

In addition to those who actually perform yeoman duties as volunteers, there are those who serve on advisory councils for many county health departments. These advisory councils may be for migrant programs, nursing services, or other types of programs. These local councils have civic leaders, ministers, businessmen and women, housewives, professional people, or recipients of the county health department services; physicians frequently act as medical advisors. These volunteers devote many hours without remuneration. Not all county health departments have such councils; not all those that do have active and interested advisory councils.

Where active, advisory councils may advise the county health department's nursing staff of community needs, provide volunteers, promote nursing programs, provide the nursing service with valuable financial assistance, and help with the staffing of the county health department.

Some advisory councils operate loan closets for the use of the community or county residents. Some of these closets have hospital beds, mattresses, walkers, wheel chairs, crutches, urinals, bedpans, and other equipment that can be borrowed by those who are ill. The county health department's nursing staff refers the patients to the loan closets. Thus, the family of the sick individual does not have to purchase equipment for a sick room, but may borrow it on a temporary basis.

For Everyone's Benefit

Lucy, Shirley, Rita, Ginny, Dorothy, and Roger are names we have given real people who are community health workers, clinic, school health and home health aides, and sanitation aides in county health departments.

Their work provides a communication and cultural bridge between the public health professionals and the populations to be served. They have become familiar figures in the migrant camps, clinics, and communities where they are aware of both personal and environmental problems of the residents. They are intimately familiar with the resources available in the community, and act as advisors to people needing assistance.

Indeed, the community health workers and clinic aides are drawn from the migrant community — or are ex-migrants, themselves. They have "been there," and they understand the migrant problems, cultures, and languages. Some workers and aides have improved themselves and have been transferred to better paying positions in public health.

To improve the services of the community health (outreach) workers, the Division of Health's migrant programs have given a series of in-service training sessions. These sessions include training and information on hearing and vision screening, nutrition, sanitation, dental health, and health education.

The activities of these community health workers, aides, and volunteers are important to the operation of public health programs in Florida, and thus of benefit to everyone - including you - the reader of **Florida Health Notes**.

junior woman's clubs, and nursing school students to assist the professional staff members. The volunteers do much of the paperwork connected with the operation of such campaigns.

In the cardiovascular screening programs, the volunteers are trained to do electrocardiograms, take blood pressures and medical histories, and weigh and measure patients. These volunteers are trained by the public health nurses and consultants from the Division of Health to carry out nonjudgmental activities.

Volunteers are used in hearing and vision screening programs at schools and in kindergartens. They assist the public health

LOAN CLOSET - A chairman of the Nursing Advisory Council of Bradford County, assisted by the public health nurse, checks over the items in a loan closet. Residents of the county may check out items to help care for sick people in their homes.



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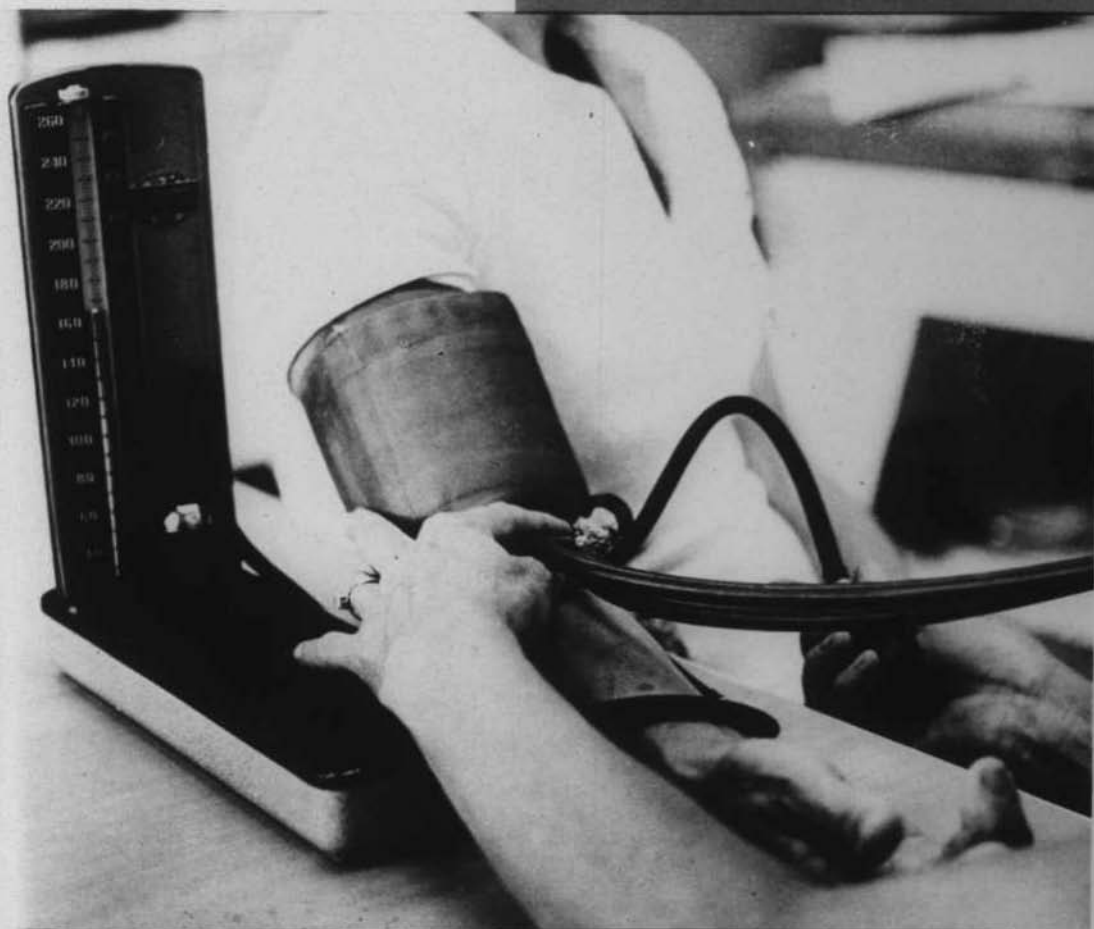
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FLORIDA HEALTH NOTES



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A Second Class Publication

HYPERTENSION

FLORIDA STATE LIBRARY



SPHYGMOMANOMETER (Cover photo) - This is the instrument that takes the systolic (higher level reading) and diastolic (lower level) of the blood pressure.

CHECKING THE ARTERY - A nurse listens to an artery for a bruit (an abnormal sound) in a patient at a hypertension clinic. If she finds one, she refers the patient to the physician.

A person, unexpectedly told that he has hypertension (high blood pressure), may be suddenly frightened and bewildered. It is true that he may have heard that his Aunt Hattie or Uncle Mark had died of a stroke; but when he related hypertension to stroke, he is usually uncertain as to what kind of future he faces.

Many people know so little about hypertension that when they find out that they have the disease they face an unknown factor. This factor can change their lives.

A great deal of information has become known about hypertension in the past two decades. But still there are many

Hypertension

causes of hypertension that remain unsolved. Medical research is continually finding new facts.

How serious is hypertension?

Nearly everyone knows of some one who has died as the result of a "massive stroke."

He may have had, or still have, parents, grandparents, or friends who are invalids because of a stroke.

He may know someone who has just found out that he has high blood pressure and has to have medication to control it.

How big is the problem in Florida?

Out of the 75,860 individuals who died in Florida in 1971, a total of 1,062 died of arteriosclerosis. Another 685 persons died of hypertension and heart-renal diseases.

You may say that these figures are low in comparison with the total number of deaths; but there are thousands of persons

who are still alive, but with the residual disability resulting from a stroke.

This issue of **Florida Health Notes** will define and explain hypertension; the causes of the disease; the symptoms; how it can be detected and treated; and what the Division of Health of the Department of Health and Rehabilitative Services is doing to find potential victims of the disease and get them under treatment before they become the victims of a stroke or some other circulatory accident.

Let's Define —

In order to understand the nature of hypertension, it is necessary to know the meaning of words used in describing and treating the disease.

You have probably seen some of these words before. If you have, this will be a review for you; if you are not acquainted with them, you may learn something that will be important later in life.

Hypertension results from tension - emotional, physical, or mental.

Arterial hypertension means an increase in the pressure of the blood in the arteries.

The Artery is a large, thick-walled vessel which carries blood from the heart to the various parts of the body. You can recognize arteries because they pulsate - caused by the contractions of the heart. (More will be said about this later).

FLORIDA HEALTH NOTES

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Arterioles are the smallest branches of the arteries. They are so small that they can be seen only under magnification. But because their walls are made of muscle, like those of the arteries, they can constrict (become smaller) or dilate (open wider). In hypertension, they constrict.

Capillary - The arterioles divide to form the smallest vessels of all, the thin-walled channels called capillaries. Through their thinner-than-cellophane walls, the substances the body needs from the blood pass into the surrounding tissues. The materials the body cells have used and want to get rid of pass into the blood.

Vein - The capillaries unite to form venules (little veins) and then into larger veins (like those that stand out on the back of your hand). These thin-walled channels carry blood back to the heart. The pressure is very low in the veins.

Sclerosis (skli-ro-sis) - This applies to a process which develops in arteries or arterioles. It is a scarring and thickening of the walls. In arteries it is called "hardening"; in arterioles, whose openings are so small in relation to the thickness of the walls, it tends to close off the openings completely. Hypertension causes arteriosclerosis or accelerates other types of sclerosis.

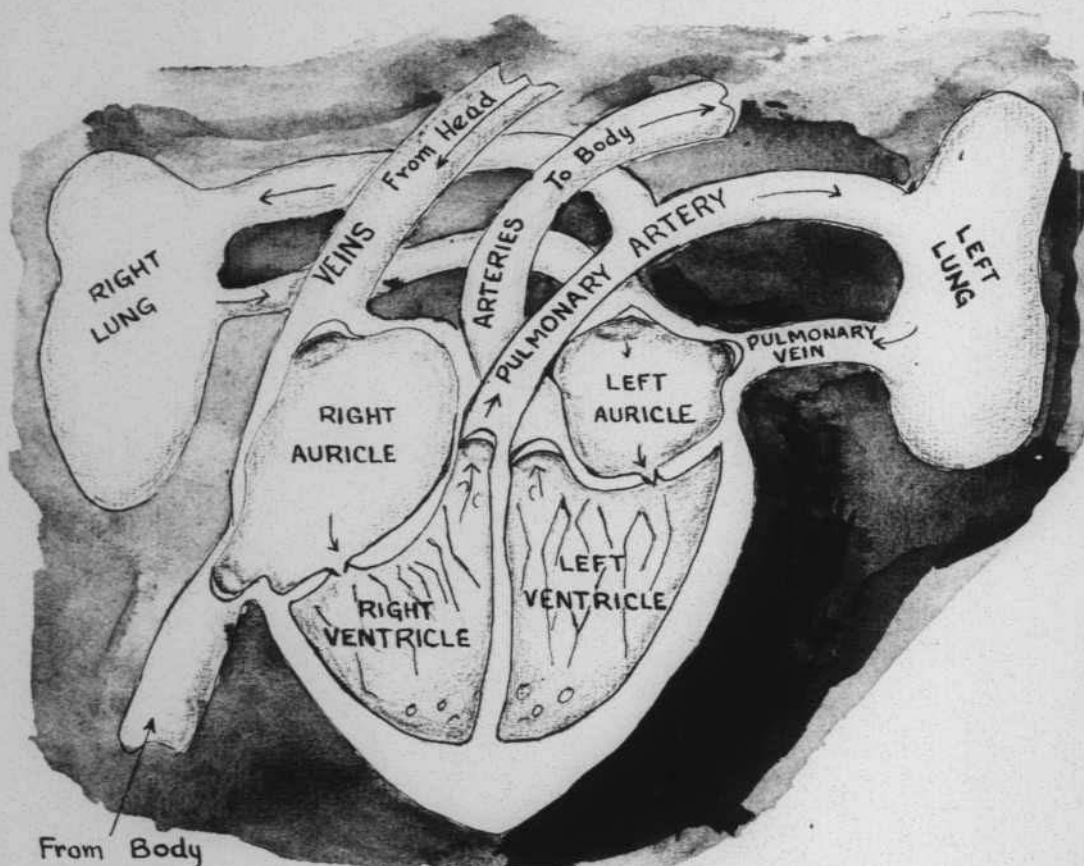
Atherosclerosis (ath-er-o-skli-ro-sis) is a form of arteriosclerosis caused by material that collects in the arterioles and arteries. More will be said about this later.

Systole (sys-to-le) is the contraction of the heart that squeezes the blood from the heart.

Diastole (di-as-to-le) is the relaxation of the heart muscles that allows the blood to flow into the heart.

Sphygmomanometer - (sfig-mo-ma-nom-eter) is a device that has a cuff that is applied to the arm. When it is pumped full of air, it compresses the arteries and stops the flow of blood. When the air is released, the systolic pressure and the diastolic pressure of the arteries can be measured through a meter.

Stethoscope - (steth-o-skop) is an instrument which amplifies the sounds of the pulse, or the heart beats, in the body so that



AMAZING PUMP - This drawing shows the chambers and blood vessels of the heart. It beats at an average rate of 72 times a minute - or up to nearly 38 million times a year.

it can be heard more distinctly. It is used to determine at which level of pressure the blood flow has been stopped.

Your Amazing Heart "Pump"

You probably seldom stop to think about how important is your heart. It is an organ composed of muscles that contracts and dilates (like the opening and closing of your fist) at an average rate of 72 times a minute. This adds up to about 100,000 times a day, or nearly 38 million times a year.

The circulation of the blood is a marvel of engineering. It is carried on through a vast network of tiny tubes; if placed end

to end, they would stretch for miles. Prick yourself on any part of the body and you will bleed. A few moments ago that blood left the heart and was on its way back to the heart and lungs to repeat its endless journey through your body.

Your heart never stops. If it does, or if it goes too slow or too fast - you are in trouble. From the time you are born until you die, the only rest the heart muscles get is in the fraction of a second pause between beats.

It is the heart that keeps the life-giving blood moving through the blood vessels that make up your circulatory system. The heart has four chambers; the right and left auricles that are separated from the right and left ventricle by valves. The right and left side are again separated by a wall called the septum.

The heart is actually two pumps. The right side of the heart pumps the blood to the lungs; the left side pumps blood through the arteries into the circulatory system that goes through the rest of the body.

From the veins the blood flows into the right auricle and then through a valve (tricuspid) into the right ventricle. The thickly-muscled walls of the ventricle contract and pump the blood through the semilunar valve into the pulmonary artery that leads to the lungs. Here the blood takes on a fresh supply of oxygen which it carries back through the pulmonary veins to the heart.

The blood flows into the left auricle and passes through the mitral valve into the left ventricle. Here the second pump, or left ventricle, contracts and pushes the blood into the aorta that leads to the head, arms, legs and rest of the body. It then passes through the capillaries and veins back to the heart. The average man has about six quarts of blood in his body, yet more than 400 gallons of blood are pumped through the heart each day.

It is the left side of the heart - the muscles of the left ventricle - that imparts the main pressure to the arterial system. After each vigorous contraction the heart relaxes and momentarily rests. At that instance the aortic valve closes, and the stream of blood rushes on to the aorta and other arteries of the body. The walls of the arteries are elastic. They expand as the blood passes through

on the way to smaller vessels. By placing your finger lightly on your wrist, you can feel the rush of blood. This is called the "pulse."

The elasticity of the arteries helps maintain the pressure in the arteries as the blood runs through the capillaries. Another factor responsible for blood pressure is the size of the arteries and smaller arterioles. They are under automatic control by nerves of the nervous system so that the blood may be shunted from one part of the body to another.

An athlete may have the blood directed to his muscles when he is running or jumping. A person in a long underwater dive will have blood sent from other parts of his body so that his brain and heart receive an increased blood flow.

What is Blood Pressure?

Blood pressure refers to the amount of pressure exerted in the blood stream as it passes through the arteries. When the left ventricle of the heart contracts, or squeezes down, it forces the blood out into the arteries. This causes the major arteries to expand to receive the on-coming blood. The muscular linings of the arteries resist the pressure, and the blood is squeezed out into the smaller vessels of the body. The blood pressure is the combined amount of pressure the blood is under as a result of the pumping of the heart, the resistance of the arterial walls, and the closing of the heart valves.

The maximum pressure in the arteries is related to the contraction of the left ventricle and is called the systolic pressure. The minimum pressure, which exists when the heart is at maximum relaxation, is referred to as the diastolic pressure.

Measuring a person's blood pressure is a simple thing. Yet it is important to every one of us.

* An elevated pressure during pregnancy may indicate the beginning of toxemia, a condition that is extremely serious to both mother and baby.

* Sudden changes in the blood pressure may occur after an injury, particularly when shock is setting in. The pressure drops quickly.

TESTING URINE - A technician checks a urine specimen for protein level.



* Blood pressure changes are seen in the course of heart disease, endocrine disorders, and diseases of the kidney.

Measuring the blood pressure is valuable; but its level must be interpreted properly.

The first demonstration of blood pressure was made over 200 years ago - on a horse. Today's physicians use a device known as the sphygmomanometer. This consists of a flat rubber bag connected to a glass tube with a column of mercury - or a dial. The bag is inflated with air by a small hand pump or bulb. The height of the mercury indicates the pressure of the air in the rubber bag.

The individual doing the blood pressure examination applies the cuff to the arm and then inflates it with air. The cuff will become so tight that it impedes the circulation in the arteries of the arm. Under these circumstances, there will cease to be any measurable pulse in the arm beyond the point where the circulation is cut off. When the pressure in the arm band is gradually released, it will eventually come down to the point where the maximum systolic pressure is just able to force the blood through the arteries under the rubber arm band. The reading at this point is called the systolic.

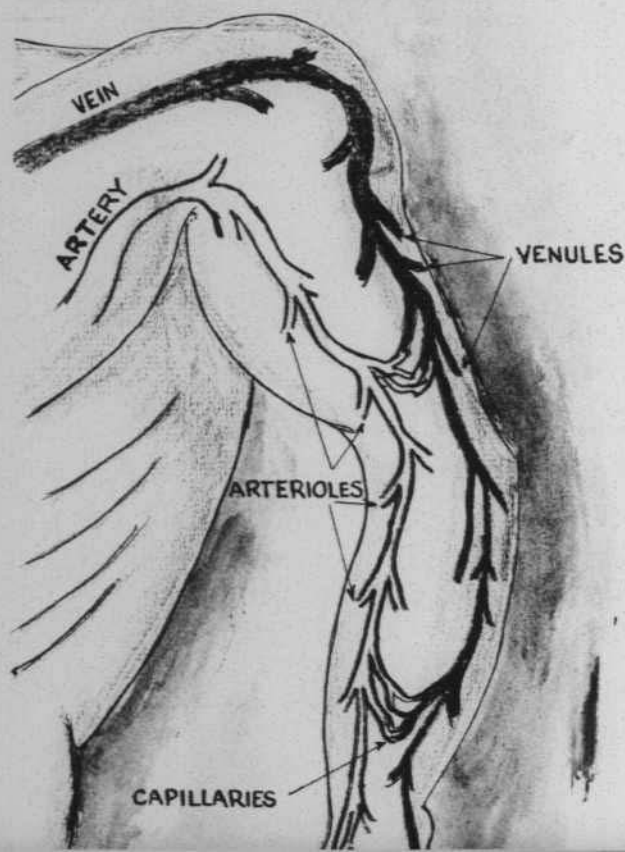
When the pressure in the cuff is further released, a point will be reached at which the blood will be able to flow through the constricted artery. The reading at which the last distinct sound is heard through the stethoscope is the diastolic pressure.

The average systolic blood pressure in young adult men is about 110 millimeters of mercury. The diastolic pressure is about 80 millimeters; and the figures are frequently stated as 110/80, or 110 over 80. Considerable normal variations from these values may occur, and values of as much as 20 millimeters below those stated may be encountered in healthy individuals. Digestion, exercise, posture, and emotional state may all cause temporary variations in normal pressure. Overweight persons frequently have a higher blood pressure than do individuals of normal weight.

What Can Go Wrong? — An Increase in Pressure

You can think of your heart, arteries, and arterioles as a system of garden hoses that end in little nozzles (the arterioles). If you were to decrease the volume of spray from the nozzle, the hose would become firm under increased pressure. It is under tension. Less water is flowing through, but it shoots out to a greater distance. Thus we see that closing down the nozzle regulates the rate and pressure at which the water flows.

Something similar happens in hypertension. The arterioles tighten down; and the heart has to work harder to pump the



THE BLOOD VESSELS -

This drawing resembles the circulatory system of a man's arm. The blood travels through the arteries and arterioles to the capillaries where it gives up oxygen to the cells and takes on wastes. It then travels back to the heart through the venules and veins.

blood through the tissues at a nearly normal rate. This is to maintain the pressure in the arteries and arterioles.

Arterial hypertension, or high blood pressure, is a dangerous disease because of its effect on the walls of the arteries. It accelerates the disease atherosclerosis. Many people without high blood pressure have atherosclerosis; but those with high blood pressure have much more severe cases of the disease.

Atherosclerosis has been known since ancient times. Early Greek physicians knew that people died with hard lumps in their arteries. When sliced with a sharp knife, these lumps would yield a greyish substance like porridge. They gave the name of "athros" or porridge to describe the lesions.

As we have said, the inside of a normal artery is quite smooth and flexible. There is plenty of room for the blood to flow through. However, in the later years of life, there is a tendency for vessels to change. The blood vessels harden with age; the muscles become less flexible.

Arteriosclerosis appears as we get older. When it occurs in the vessels of the brain, the roughened spots on the vessel linings may cause the blood flowing over them to clot. Or the vessels may become partially or completely occluded; the vessel walls may be weakened as the result of the presence of the fatty material. Rupture and bleeding may occur. In either case, part of the brain is injured and the individual suffers an "apoplectic stroke."

No doubt you have heard the word "cholesterol." It is a complex, waxlike substance. An excess of this substance, along with other fatty substances, can become deposited in the walls of the blood vessels to cause atherosclerosis. When it is deposited, the cells of the blood vessels react to it as to a foreign substance. Scar tissue is laid down around it as though the body wants to wall it off. It is this walling off that can cause distortions and obstruction of the normally smooth, round contour of the blood vessels. Some medical scientists and public health officials believe that excessive amounts of cholesterol and other fatty substances can cause arteriosclerosis; others believe it is largely a matter of heredity.

Modern pathologists have shown that people with high blood pressure have not only atherosclerosis - but they have a disease of the middle part of the artery wall called the "media." Public health workers know that the atheroma (the fatty substances), the scar formations of the lining of the arteries, as well as the degeneration of the middle part of the artery wall occur in people



A SIMILARITY - Like the closing down of a nozzle of a garden hose, the blood pressure is affected by the closing down of the arterioles in the circulatory system.

with high blood pressure. There is a direct relationship between these factors and the duration and height of the blood pressure.

The Symptoms of Hypertension

Because arterial hypertension is potentially a dangerous disease, one should be treated for it at the earliest possible moment after detection. The treatment of hypertension can prevent degeneration of the middle of the artery wall and can reduce the arteriosclerosis; but there is no evidence that the disease can be cured if it has already occurred.

The most difficult point about hypertension is that it usually causes no symptoms in a large majority of people until one of the acute manifestations appear as a stroke or heart attack.

The only typical change is in the blood pressure itself. Changes in the smaller blood vessels may cause a number of symptoms. Palpitations of the heart (a series of rapid heart beats), headaches, dizziness, flushing of the face, and fatigue are sometimes noted.

Headaches are the most common and incapacitating symptoms. They often are present on waking from sleep, but they may occur at any time of day. They do not signify that a hemorrhage

in the brain is in the making; nor do they indicate that the blood pressure is exceptionally high. It may be exceptionally low! If you have consistent headaches, your physician usually can stop them.

Dizziness - or lightheadness, fullness in the head, and tightness over the scalp are common symptoms and have little importance. The feeling of numbness and tingling in the arms and fingers fall into the same category. Vertigo, a sensation that the world is moving about you, or that you are moving in space, is of more importance; but in every case you should see your physician.

Detecting Hypertension

Many people have slight to moderate elevations of their blood pressures at one time or another above the usually accepted average limits. "Average" covers quite a wide range.

Conditions may change the level of your blood pressure. Just the act of having it taken makes some people nervous and this raises their pressure above the normal. In some individuals, fear and anger can raise the pressure as much as 50 to 100 points above the normal level. Eating a meal, or doing exercise can make a difference. When a person is at rest, the pressure falls back to a basic level. These fluctuations are normal. They occur in nearly every one.

There are several important mechanisms in the body that work to control blood pressures. The adrenal glands, located just above the kidneys, provide a hormone called "adrenalin." This chemical constricts the arterioles, causing the blood pressure to rise. A fresh burst of energy is also provided to meet the emergency.

Another organ, the carotid sinus, found just below the jaw, helps to control the blood's flow and pressure. If the blood pressure should fall, this organ sends a message to the brain, which

Blood pressure has to be persistently high before it is considered abnormal. Sporadic bouts of elevated pressure are usually due to some emotional or physical stress. There are many ways this elevation can be controlled, and that is why the treatment is not the same for all patients.

in turn orders the muscles of the arterioles to contract. This brings the pressure back to normal.

Pressure on the carotid sinus can produce changes in the blood pressure. One young lady became dizzy every time her husband kissed her on the neck. He was pressing too hard on the carotid sinus.

Abnormal blood pressure readings may be put down to excitement, nervousness, or tension, and in most cases, the patients are told not to worry about them. If successive readings show recurring abnormal elevations of arterial pressure over a period of time, full-blown hypertension may have developed. Many people have moderately short periods of hypertension; and over the years they have noted either a return to normal pressures, or at least to lesser elevation.

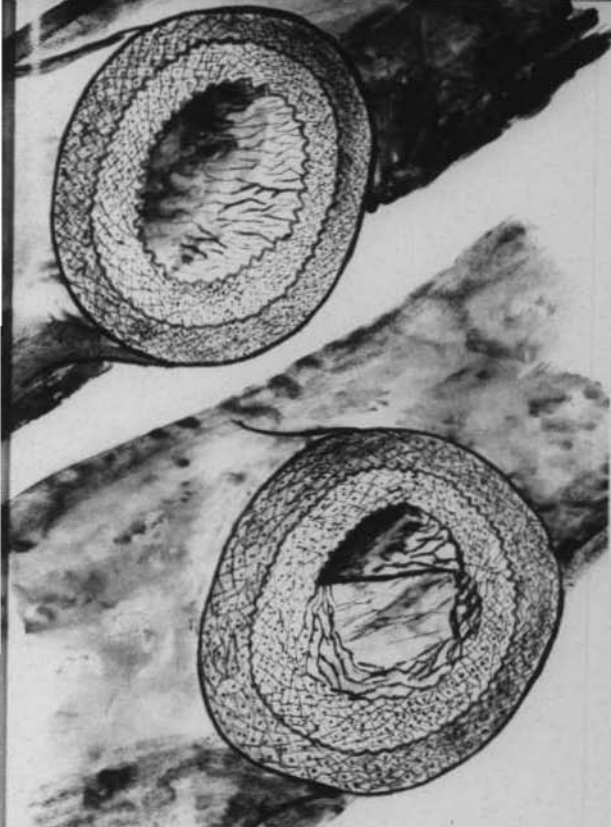
"Essential" hypertension is persistently elevated blood pressure with a cause that is not known. A great majority of patients with hypertension have this kind. It covers the entire range of minimum severity with little progress in the blood vessel disease, to the very severe form with progressive vascular disease.

"Malignant" hypertension is a form that refers to the speeding up of the destructive changes in the blood vessels. The word "malignant" in this case has nothing to do with cancer. The destruction of the vessels may be seen first in the back (retina) of the eye. Blind spots may occur in the vision. This type of hypertension is a very serious phase of the disease. Treatment often accomplishes good results - if the disease is found in time.

There is no doubt that most people with hypertension have a hereditary background for the disease. Many of their parents or grandparents suffered from a "stroke"; "heart disease," or "kidney disease." Most of these conditions are manifestations of hypertension. In some families, hypertension, if sought, can be found in children. Young people from families with histories of hypertension often have hypertension in their early twenties. But it does not follow that because parents or grandparents had hypertension that all of the children will suffer from it or that it will appear in its severest form.

There are many people who develop hypertension that do not have it in their background. Since there is little one can do

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SCLEROSIS - The top drawing shows a normal blood vessel. The one at the bottom depicts one that has been partially closed by a fatty substance called "cholesterol."

about parent selection, it is wise to have routine physical examinations that include having your blood pressure checked.

Medical men say that of a group of individuals who show periodic abnormal hypertension, roughly 25 per cent will not develop the full blown disease. The problem is: Can hypertension be averted in the remaining 75 per cent - even if they are carefully treated.

Some 40 to 50 per cent of all individuals who suffer heart attacks and strokes die within the first few minutes of their attacks. Thus they never have a chance to receive medical attention. For these people, their only chance of profiting by medical attention would be to discover their high blood pressure through screening tests and regular, annual physical examinations long before the symptoms develop.

It is difficult to determine just when a person has hypertension and when his blood pressure is normal. Many different factors influence a person's blood pressure. Exercise may raise

the systolic from 120 to 180; but this is not important. It is the lower, or diastolic pressure, that really tells the story. When the lower figure goes over 100, there is more reason for concern and time to follow your physician's instructions.

Cause and Effect of Hypertension

What causes high blood pressure? In many cases the causes are not known. There are few rare conditions in which the blood pressure may be elevated:

- * pheochromocytoma - a rare tumor on the pancreas;
- * infections of the kidneys;
- * diseases of the brain or spinal cord; and
- * toxemia during pregnancy.

Once the underlying conditions are removed or corrected, the blood pressure may return to normal.

Many people have elevated blood pressures because of an increased amount of hormones. A small tumor of the adrenal gland (located at the top of the kidneys) may produce too much or no epinephrine (a hormone), or too much of another chemical. A disease of the artery to the kidney may stimulate a kidney to function improperly.

A condition of the blood caused by too many red blood cells can also cause high pressure. Disease of the kidney, produced by infections leading to a scarring of the kidneys, can also produce arterial hypertension. Physicians often find it difficult to treat patients with this type of high blood pressure. If their blood pressure is reduced by drugs, they sometimes find that their kidney function improves. Other people continue to grow worse. This is a reason why it is necessary to be diagnosed and receive treatment as early as possible.

Hypertension can be produced by certain infections and neoplastic diseases (tumors) of the brain.

Any one of a large number of chemical neurological or physiological regulatory mechanisms may produce an imbalance in the blood pressure. If not corrected, they soon lead to irreversible changes in the walls of the arteries and may quite likely lead to a stroke, heart attack, or peripheral vascular disease.

LIVING WITH HYPERTENSION - The medical supervision of a person with hypertension includes regular physical examinations.



The real problems of hypertension are not the level of the pressure, but the effects of the pressure on such organs as heart, brain, eyes, and kidneys. The higher the pressure, the greater the potential danger to these structures.

Essential hypertension - the cause of which you really cannot determine - may be a long drawn out affair. A patient may go for 10 to 15 years without serious complications. Then serious complaints may set in quickly.

Patients with hypertension may develop hypertensive heart disease. Because higher blood pressure requires hard work, the heart develops abnormally thick and strong muscle fibres. Elevated pressure thickens the coronary arteries and they tend to become blocked. If an artery becomes completely obstructed, the patient suffers a heart attack.

High blood pressure frequently causes damage to the brain. A weakened vessel may rupture, causing an extensive hemorrhage. This may result in complete paralysis of one side of the body. A more common type of injury is a clot forming in an artery leading to the brain; this too can result in paralysis.



HYPERTENSIVE CLINIC - Clinic aides (left) do an electrocardiogram on a patient in a hypertensive clinic, and then send the results to the Division of Health physicians for interpretation.

Hypertension can produce serious changes in the eye. A hemorrhage may occur which can interfere with the vision.

Probably half of the hypertensive patients eventually develop some trouble with their kidneys. This may be noted by frequent trips to the bathroom at night; albumin may appear in the urine, indicating trouble with the filtering function of the kidneys.

Living with Hypertension

Hypertension is a chronic disease which means that unless you are an exception, or a cure is discovered, you must learn to live with it for the rest of your life. One of the greatest and often tragic mistakes is to believe that nothing can be done for it. The quality of treatment, thanks to research and careful bedside observation, is steadily improving.

The outlook for the hypertensive patient depends upon the extent to which the disease has progressed, its rate of progress, and the persistence with which the physician's instructions are followed. Within the bounds of his handicap, the hypertensive patient can - in many cases - lead a useful and happy life. An exception is when the patient becomes unduly anxious and nervous

about his condition. He must understand that, with care, his condition may be neither a great handicap nor a danger.

A complete physical and functional evaluation by a physician may determine whether a disease or a malfunction of one of the organs of the body is producing the elevated blood pressure and if it can be corrected. Frequently the kidney is involved, or one of the several types of tumors may be present.

In mild cases, bed rest is desirable for a brief period of time. This usually helps to relieve any symptoms that may have developed. Following this initial rest period, the patient should seek employment that offers little or no hard physical labor, and in which he will have considerable time free for rest and relaxation. He should have at least nine hours of sleep each night. Mental and physical stress must be eliminated. Over-exertion should be avoided. Obese persons should reduce their weight. Smaller meals are beneficial.

A well-managed hypertensive can do most things that normal people can do. Except under special circumstances, moderate physical exercise should be part of the daily routine. It is true that violent exercise temporarily elevates blood pressure unduly; mild exercise does not. Even during periods of heart failure, some mild massage and movement is necessary to prevent blood clots from forming in the veins.

The simple rule is: Never exercise to the point of fatigue. Stop before you are tired. Competitive athletics are undesirable because it is difficult not to play to win, not to be a good "sport" and finish out the game. Any game or form of sport that is not competitive and more or less deliberate and non-competitive is good. The exact choice lies with the individual but should have the approval of his doctor.

Sleep is the hypertensive's best friend. He must learn to sleep or doze whenever the opportunity presents itself. This is a habit that can be formed and be almost life-saving. Fatigue is a signal to rest. If you cannot sleep, there is no harm in propping yourself up with a good book and reading. But be sure the books are not ones that will excite you.

Hypertensives should follow their physician's direction when it comes to food. Four light meals are better than three, and five or six lighter ones are even better. Food should be nutritious, free of food fads, and not taken in too great quantities. If you are getting overweight, you most probably are eating too much. Obesity must be avoided. The reason is that every pound of flesh means extra weight which requires just that many more blood vessels. This means more blood to nourish the tissues, and which in turn means the heart must pump that much harder.

Hypertensive patients are just like everybody else. But they should avoid stimulants - such as coffee and tea. They whip up the nervous system into further activity.

Tobacco should be avoided. It is not good for the nerves or the blood vessels. There is no doubt that smoking cigarettes raises the blood pressure and speeds up the heart. There is no question that a nonsmoker stands a better chance in his battle for survival.

Effective Drugs for Treatment

Within the past 15 years effective drugs for treating hypertension have been developed. Now it is possible to treat most patients with high blood pressure even if the cause of their disease cannot be found in all cases.

Many of the anti-hypertensive drugs may produce undesirable side effects, such as increasing the blood uric acid and bringing on an attack of gout. Others may increase the blood sugar and require special treatment. Others aggravate joint pains and make worse certain types of arthritis. Some drugs, when given with other drugs, may actually make the blood pressure go up.

It is for these reasons that a patient with high blood pressure should be treated by his personal physician who is kept aware of any drugs the patient may take, and of the changes in the patient's life habits.

A number of studies over the past two decades have shown that the new drugs now available for the treatment of hyperten-



LABORATORY - A technician in a Division of Health laboratory checks the results of tests for triglycerides. Other blood chemistry examination, such as cholesterol, uric acid, glucose and hemoglobin, are also carried out in the laboratory.

sion have had an impact on the mortality from hypertension and hypertensive heart disease. Anti-hypertensive therapy has decreased the incidence of stroke by three-fourths in those treated, and there has been a slight decline in deaths due to high blood pressure.

Public Health Clinics for Hypertensive Patients

The Division of Health operates several clinics for the evaluation of treatment methods of low socioeconomic patients with blood pressures above 160/90. In doing this it stays abreast of developments in the field of hypertension.

A hypertension-lipid clinic at University Hospital, Jacksonville, has a caseload of some 350 patients. In a few counties, the county health departments, Division of Health and/or local medical societies carry on the treatment of patients with high blood pressure who were discovered in screening programs. In some counties, patients who are unable to pay are treated in county hospitals.

A Rural Hypertension Program, funded by the Florida Regional Medical Program, was in operation in Washington, Walton and Holmes Counties from 1967 to 1970. When support was discontinued, the three county health departments continued to follow-up and treat

some 3,000 patients - many who could not obtain care from private physicians.

The Division of Health believes there is a need for preventive medicine clinics throughout the Sunshine State where the medically indigent patients with hypertension can seek advice and treatment.

A Time to Keep Calm

Do you know the level of your blood pressure? Many people do not know until it is too late and they are the victims of a complication of hypertension. A famous physician - head of a well-known institution - died at the height of his career because of a stroke. Another man had a series of small strokes that completely changed his personality. Perhaps these people could have been saved or helped by early diagnosis and treatment.

If you find that you have hypertension, now is the time to keep calm. Nothing is more important than a quiet, contented mind. There is no reason to lose a battle against a disease that can be brought under control with the proper medication.

See your doctor! Or if you cannot afford private medical care, contact your county health department. Give your doctor a chance to help you. Don't wait until you are carried to the hospital. Now is the time to do something about living.

A Case History

A woman, whose blood pressure had been well controlled for two years, came into the county health department clinic recently on her regular visit. Her blood pressure was extremely high - even though she insisted that she had continued to take her medicine. She explained that her son had just been shot while standing on the street.

The emotional stress in the woman was enough to upset the balance that had been achieved by her physician. He found it very difficult to get her blood pressure down. While it was up so high, her kidneys began to fail, albumen and blood appeared in her urine, and this situation did not clear up until her blood pressure was reduced.

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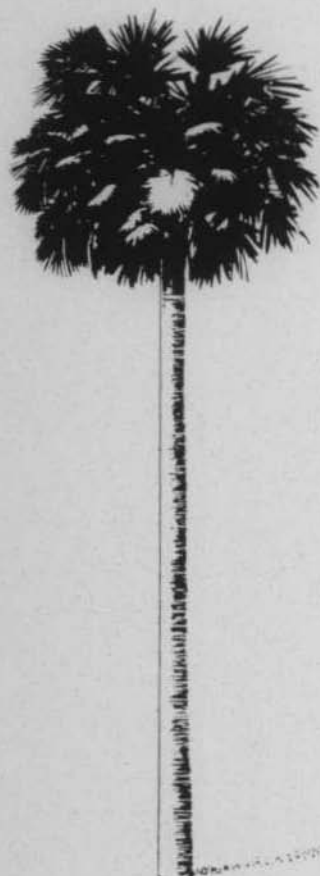
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FLORIDA HEALTH NOTES



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**KNOW — Food Facts
from Fanciful Fads**

FLORIDA STATE LIBRARY



KNOW YOUR FOODS
 (Cover photo) - Cereals, organic foods, and self-prescribed vitamins do not make up an adequate diet. Although many health foods are nutritious, they do not replace the basic four food groups (see page 294) that one needs every day.



FERTILL
 EGGS 85¢



NEED ADEQUATE DIETS
 - Those particularly in need of nutritious foods are young children, the elderly, and the teenager.

KNOW – Food Facts from Fanciful Fads

People in Florida spend hundreds of millions of dollars on food annually. It is their source of life, strength and well-being. They have many opinions about what foods the body needs - some correct, some erroneous.

NUTRITION is the study of how the body uses food. It is new knowledge - and all of the facts are not yet in. Perhaps that's why it's so controversial.

How much do you know about foods and nutrition?

Do you know what foods you need for energy? For body repair? For body function? For children to grow? For prevention of overweight? For preventing the high risk factors of cardiovascular (heart) disease?

Do you know the difference between organic foods and natural foods? Can you recognize a "fad diet"? Do you know what foods and their nutrients your body really needs?

Can you tell the difference between reports from the respected nutrition scientists and the claims of pseudo-scientists? Do you really know if the foods you eat are good for you?

If you are interested in foods and nutrition, you are in the company of millions of Americans.

An explosive interest in nutrition has developed in the last few years. Reports from nutrition surveys have shown that monumental health problems, such as iron deficiency, anemia and obesity, do exist in our affluent country. And food consumption studies of the U. S. Department of Agriculture show increased use of refined sugars, soft drinks, bakery products, and fats, and less use of nutrient-laden fruits and vegetables, breads and cereals, and dairy products. It is known that excess fat in the diet can contribute to obesity, and that too much cholesterol, saturated fats, and perhaps refined sugar in the diet, can be linked to heart disease - the leading cause of death in the United States and Florida.

Food and nutrition in the news - to a population not knowledgeable in the facts - have led to the promotion of many types of foods and food supplements. Scare articles and books are eagerly sought by a gullible public.

Those persons interested in the ecology have carried their interest over into nutrition. Chemical additives and pesticides do need to be carefully monitored to be sure of their safety and safe limits for their use. Some of the interests are well directed and well informed; some based on misinformation, pseudo-science, or distortion of facts.

All communication media - newspapers, radio, television, magazines, books - carry information about nutrition. Some news is authentic and important; some of the respected nutrition researchers are writing newspaper columns, magazine articles, and books. But some are misleading or deal with trivia. New "diets" make brief flings in the news nearly every week. There are headlines about pesticides, residues, additives, and foods as the causes of disease.

This issue of **Florida Health Notes** will tell you about basic food facts and food faddists; which diets are good and which are harmful; how to recognize the false claims of pseudo-scientists and be better able to know what foods are "good for you." We will also tell you where to look for reliable information and describe the nutrition services of the Division of Health and county health departments of the Department of Health and Rehabilitative Services.

What are "Food Fads"?

Food fads are not new. Pages of recorded history are marked with the food foibles of man. From the beginning of time, man has attempted to prolong life, increase strength, enhance his sexual potency, perform miracles, and combat disease through the promotion of special diets.

Roman Consul Marcus Porcius Cato decided that men could live on cabbage alone. He ascribed mystical powers to the vegeta-

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PROMOTED CABBAGES

- Cato, a consul of ancient Rome, believed that man could live on cabbage alone. His wife and son became ill, but died after they were given cabbage as a cure.



ble, and fed it to people who were ill - without regard to cause. His wife and son became ill and were fed cabbage. Both died. Despite this unfortunate turn of events, Cato's beliefs were not shaken and with the support of proselytes, continued on his way. History does not record whether Cato died of malnutrition or not.

From those early days down through the current craze, food fads have been a part of man's culture and society. Even in our age of sophisticated medicine and scientific investigation, food fads maintain their special appeal. History records that on the day of the nation's first space flight, September 27, 1961, - a new book launched a weight reduction diet based on restricted carbohydrate intake and safflower oil.

There are a multitude of food fads, nutrient supplements, fad diets. Many are promoted as a source of income to writers or processors. Nutritionally some are useful but oversold; some are useless; others are dangerous.

Obesity is a major public health problem. Weight reduction can be achieved by following a calorie-controlled, nutritionally-adequate diet. This requires patience and will power. Promoters have exploited the obese with a myriad of fad diets based on the "eat all you want" premise. Some of these diets include

* all-meat diet (commonly known as high protein-low carbohydrate diet);

* quick weight-loss diet (drink all the water you want);

* quick inches-off diet (a low protein diet);

* drinking man's diet (a promoter's dream that urges you to drink all the alcohol you want - and lose weight (alcohol is high in calories);

* a grapefruit and egg diet that has been promoted as the Mayo Clinic diet, but the well-known Mayo Clinic of Rochester, Minnesota, claims it has nothing to do with it;

* "eat all you want and still lose weight" diet. An impossible notion because to lose weight you must consume less calories than your body uses up in its activity.

Another philosophy to diet is to identify with a spiritual movement. Examples of such diets are the vegetarian and macrobiotic, or other diets through which participants try to reach a higher spiritual level.

Why Food Fads?

There are many reasons for food fads. Many are sincerely motivated; others are promotional. Food fads could be a sign of rebellion against society. When the food fads are based on sound nutrition facts and investigation, they do the nation a service. For example, when young people choose whole grain cereals, fruits and vegetables, along with some good sources of protein, they are better fed than their contemporaries who exist on soft drinks and snack foods.

But when the people are misinformed, fads can do harm.

Most food faddists are sincere in their beliefs. In their minds they raise health charges which have some basis: foods have harmful chemicals; Americans are malnourished; some prepared foods lack proper nutrition.

* Some crops, such as lettuce or vegetables grown close to the ground and treated with chemical fertilizers and pesticides, do retain minute chemical particles. Some fruits and vegetables do retain some chemicals. But these amounts are small and do no harm if the foods are carefully washed before eating.

* Many Americans do suffer from some nutritional deficiencies because of their poor choice of foods that are available; and their lack of knowledge of nutrition and motivation to eat a nutritious diet.

* Refined flours lose some of their nutrients in the processing. But nutrients removed can be replaced by enrichment with iron, riboflavin, thiamine, and niacin.

However, the following charges are without basis:

* our soils are overcultivated and underfertilized - yielding vegetables and fruits that are below standards in vitamins and mineral content;

* chemical food additives cause cancer;

* chemically-grown foods are dangerous.

The U. S. Department of Agriculture and state agencies study our soils through agricultural colleges and agricultural extension services. These agencies say that the depletion of the soil - which critics worry about - ignores the fact that plants grow and make essential nutrients out of inorganic materials in the soil for their own needs - not for human food. Crops of fruits, vegetables, and cereal grains will not grow if the chemicals they need are not present in the soil. A farmer using depleted soil would be out of business in one season.

Without chemical fertilizers and pesticides, farmers could not grow enough food for our nation. Without chemicals the cost of food would be prohibitive. A suggestion was made that instead of using sprays to kill potato bugs, "they be picked off by hand." This would put the price of potatoes, a staple of the nutritious diet, out of sight. Proponents of organic gardening, who suggest use of only natural fertilizers and who deplore use of chemicals, do not understand the economics of farming.

Many "convenience foods" in the modern supermarket do contain such chemical additives as preservatives, flavorings, stabilizers, food colorings, and emulsifiers; but every shopper knows that he is supported by the latest research. Spoilage retarders, when added to foods, keep them from going bad on the shelves and in the stores. Baked goods would mold quickly, salad oils would turn rancid, canned products would discolor if spoilage



BOOKS AND BOOKS -
The shelves of many book stores are filled with people's opinions on foods. Some books are important; many are filled with trivia and misleading information, and serve only to promote someone's pet food fads.

retarders were not added to foods. Convenience foods would not be possible.

These chemicals are used in small amounts and safety limits established by the food industry and governmental agencies. Natural foods, or "health foods," are nutritious, but so are many other foods. The questions are: Does the food supply available in Florida provide the foods to meet our nutritional needs? Do our citizens know how to make wise food choices?

A survey shows that five per cent of the population are susceptible to food fads, organic foods, vegetarian diets, nutrient supplements, and bizarre methods of weight reduction. The promotion of sound factual information is somewhat hampered by the lack of knowledge of the results of publicized food fads.

Food fads, according to the U. S. Food and Drug Administration, is a half-billion-dollars-a-year business. There are some 50,000 door-to-door salesmen pushing massive doses of vitamins, nutrient supplements, literature, and health foods. There are an increasing number of health-food stores and tea houses where you can buy "organic foods" and "natural foods"; or where you can drop in for a meal or snack of freshly prepared fruit and vegetable

juices, health salads; burgers or steaks made from nuts and beans; or a "pipkin of pawpaw juice and a cattail muffin."

The Seekers of Nutrition Information

There are many types of people who seek information about nutrition and who can be misled by the food faddists if they do not receive satisfying answers to their questions from the medical profession, nutritionists, and dietitians, public health workers, or reliable books. They are

- * health seekers - persons with a chronic disease that does not respond to treatment as well as they would like;

- * the alienated and extremist;

- * those seeking long life and "super" health;

- * the fashion followers;

- * the elderly who yearn for better health and vigor;

- * the young with a superficial understanding of nutrition and dedication to ecology.

Many individuals attracted to food fads are people who yearn to stay attractive and youthful. Many well-known and admired personalities in the cinema, stage, television, and sports are eccentric about their foods. One actor takes up to 30 vitamins and food supplement pills a day; a stage star carries her own food to restaurants and parties; an actress feels that zucchini squash has magical properties. Many talk endlessly about their "special diets" and how they suffered from acne, indigestion, stomach cramps, bleeding gums, and insomnia until they started their special vitamin or special dietary regime.

There are two ways that misinformation on nutrition is transmitted:

- * by those who give misinformation inadvertently - scientist with a bias; incompletely informed educators or health care personnel; and uninformed friends, relatives, and associates.

* by those who have a product or book to promote, whose nutrition science information is incomplete, distorted or exaggerated. Advertisements for foods or diets guaranteed to cure arthritis, diabetes, or cancer; to increase virility; or cause easy weight loss without calorie control are always unfounded.

Some promoters of food fads draw thousands of people to a lecture. Listeners hang on every word as the "authority" attacks the use of chemicals by agriculture, and the nutritional information given out by medical and public health professionals. The promoters extoll the need of massive doses of vitamins, and attribute the causes of arthritis, cancer, diabetes, and brain damage - and many other ills to nutritional deficiencies.

The Recommended Dietary Allowance of the Food and Nutrition Board of the National Research Council is not accepted by promoters of food fads - even though these nutrient recommendations for healthy people in the United States are based in the consensus of thinking of the most highly responsible nutrition researchers in the country. Food fad promoters fail to take into consideration the individual's needs; but people's requirements



THE SEEKER - Many people - dissatisfied with medical advice given by physicians - seek the answer to weight reduction or a quick cure for disease through food supplements, food fads, or pills.

vary and these should be considered. A person with cancer, epilepsy, heart disease, diabetes, or arthritis needs medical assistance - with medically prescribed diet as part of his total treatment.

Too often, average Americans - teenagers, youths, elderly, and those looking for a quick and easy way to lose weight, or quick cures for disease, fall for food fads seeking "secrets" and easy answers to complex problems to which the answers are not yet known. Too often they ignore known facts of biology, chemistry, nutrition, and medical science.

The Search for Spiritual Foods

People have always searched for a higher meaning of life. They have searched for an inner peace, a spiritual re-awakening, or rebirth. This permeates all aspects of life and even diet. Several established religions have prescribed dietary laws as part of their traditional observances. Now large groups of the "Now Generation" are looking for a spiritual experience through what they eat.

The diets of fat meats, rich milk and cream gravies and sauces that were common during grandmother's day are not needed today. People of past generations did hard physical labor; but labor-saving devices have changed that and every one needs fewer calories and fats. Many young people have rejected the foods of their parents and are looking for foods that will give them "spiritual uplifting." They sometimes object to the slaughter of animals as "inhumane." Many cults propose that observing special diets will help them to reach nirvana or Paradise. As one young lady, who lived in an apricot orchard, said, "All of us are searching for the same thing, whether you call it peace, bliss, or God." It is believed that diet controls all areas of behavior and helps one to achieve lasting happiness and personal union with the universe.

There are many dietary variations. These include

- * the lacto-ovo-vegetarian diet containing vegetables, fruits and cereal products, supplemented with milk, cheese, and eggs. This can be a nutritionally adequate diet and compatible with good nutrition practices.

* the lacto-vegetarian diet, consisting of vegetables and cereal products, supplemented by milk. This, too, can meet nutritional needs.

* the pure vegetarian diet containing only vegetables, cereal products, nuts and beans without any animal foods. To meet nutritional needs, protein must be carefully planned to provide essential amino acids with proper combination and quantity of dried beans, peas, and nuts, and an assortment of cereal grains.

* the fruitarian diet, consisting of raw or dried fruits, nuts, honey and/or olive oil. It would be difficult to meet nutritional needs with this limited assortment of foods.

* The Zen Macrobiotic diet which represents an extreme limitation in both kinds and amounts of food.

Proponents of the Zen Macrobiotic diet say that it is a means of creating inner spiritual awakening and unity with the forces of nature. The founder of this diet was a George Ohsawa - a Japanese - who proposed that the diet deals with rejuvenation, longevity and eternal happiness. Even though the diet is dangerous, it has caught on among some young people.

The Zen Macrobiotic diets consists of ten ways of eating and drinking by which a person supposedly can establish a healthy, happy life. People who follow the more rigid diets are in danger of incurring serious nutritional deficiencies, particularly as they progress to the highest level of dieting, which is a 100 per cent diet of brown rice.

Cases of scurvy, anemia, hypoproteinemia, hypocalcemia, emaciation, and other forms of malnutrition have been attributed to this diet. There have been some deaths reported among the young dietary adherents. Because proponents think of the diets as cures, they do not seek medical treatment.

What are Health Foods?

Everyone is talking about "health foods"! What are they? Any foods providing the essential nutrients are health foods. The

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**TRIPPING THE LIGHT
FANTASTIC** - Nutri-
tious foods in an ade-
quate diet can give
elderly people the ener-
gy to enjoy the dance.
However, nothing will
preserve their youth.



lean meat, fish, poultry, cheese, eggs, dried beans, peas, and peanut butter; the assorted fruits and vegetables abounding in Florida's markets and produce stands; the milk and dairy products recommended for good health; the enriched and whole grain breads and cereals in any grocery store all qualify as health foods.

Every food market that sells these foods could honestly hang out a sign as a health food store. As for fresh produce, the store that has the freshest, well-refrigerated products, the fastest turnover, and sells the largest volume probably offers the best return in vitamins and minerals.

However, the market responds to popular demands. With increasing requests from the public for what are called "health foods," such foods and health food stores have become big busi-



BIZARRE FOODS

Health food stores promote the sale of food supplements, organic foods, and other unique items - at high prices.

ness. Granola, herbs, teas, breads and fruit products without chemical additives are appearing on the shelves of the regular supermarkets. There is some confusion between "health foods" and "dietetic foods." The present craze for "health foods" are for those claiming special health-giving values and also for those prepared to meet requirements for the popular vegetarian or "organic" diets. In contrast, "dietetic foods" are products prepared for persons in various types of therapeutic diets prescribed by physicians - such as, vegetables packed without salt for sodium restricted diets, or fruits canned without sugar for persons on a carbohydrate-controlled diet for diabetics.

Because of the limited market, many persons with allergies to wheat have long needed to go to the health food stores for special gluten-free flour and other types of flour not usually stocked in regular food markets.

The health food stores have long catered to both of these needs.

However, the bulk of the health food stores' business is organic foods. These foods are allegedly produced without chemicals of any kind - no pesticides, no chemical fertilizers, no chemical additives. Meat comes from animals raised without the benefits of antibiotics. Truly organically-grown fruits and vegetables may appeal to the followers; but food technologists say they have no

more nutritive value than ordinary, chemically-grown crops and meats, and in fact may be of poorer quality.

These foods are far more expensive. Organic or fertile eggs regularly cost at least 50 per cent more than ordinary ones. An 18-ounce jar of "old fashion" peanut butter (because it is not homogenized and there are no additives, the oil separates) costs 75 cents and upward, while its conventional counterpart may cost only 52 cents. "Organic" honey costs more than the regular kind. No one can be sure that the bees know the difference between flowers grown with chemicals and pesticides, and flowers grown with natural fertilizers.

Many health food stores tend toward open bins of grain and little refrigeration so that produce appears wilted and dried, suggesting possible losses of the vitamins and minerals so eagerly sought. Producers of "health" food products are usually small operators and may not conform to the sanitary codes and practices.

Currently there are no official definition or standards for "organic" or "natural" foods, so there is no protection for the consumer to assure him that the foods he purchases are really organically grown.

It is disheartening to think that some "health" food devotees, young and old, may actually be skimping on nutritional basics to

SUPERMARKETS - Nearly every supermarket has a section of specially prepared foods for diabetics and other people on therapeutic diets - at lower costs than health food stores.



pay for foods which they think have special health-giving qualities. A balanced diet of meat, or other protein-rich foods; dairy products, potatoes, fruits, vegetables, enriched breads and cereals supply all the nutrients for good health.

Supermarkets carry an abundance of nutritious foods, as well as foods for various diets in their special foods sections. The foods are as nutritious as those found in special stores and despite the ordinarily high cost of food, they are competitively priced.

By reading the labels on containers of foods, you can determine the ingredients in the food you buy. State and federal government agencies control the claims made in labeling. "Enriched" foods (chiefly those made from cereal grains) are nutritionally improved by replacing or restoring amounts of thiamine, riboflavin, niacin, and iron removed by processing. "Fortified" foods are those in which one or more ingredients have been added to provide certain nutrients that may not be present naturally in the foods. The addition of Vitamin D to milk, and iodine to table salt are examples.

Ingredients in processed foods are listed from most to least amounts. The Federal Food and Drug Administration is conducting tests of various types of nutrient labeling that would be more informative to the average consumer so that he could be more discriminating in selecting foods with the most nutrient value for his money.

Weight Reduction

Formerly it was the women in the household who were counting calories because of their concern about their figures and the fit of their clothes. Now many business organizations require their employees to undergo regular physical examinations. If a man is found to be overweight, he may be told to get it off and keep it off or jeopardize his job status.

Obesity is a major public health problem and most adults need to control their calorie intake to control their weight. However, they should not be misled by magazine and newspaper advertisements for weight reducing pills, gadgets or food supplements. Television and radio programs, books and magazines all suggest quick and easy ways to lose weight, when the wise way remains the calorie controlled diet of basic foods.



FLORIDA'S MARKETS - The markets of the Sunshine State are filled with nutritious fruits and vegetables.

Gadgets - sauna baths, weighted belts and harnesses, and air inflatable shorts - are worthless for weight loss. "Rainbow" pills, amphetamines, thyroid, digitalis, and injections of pituitary hormone are dangerous unless taken under a physician's supervision.

Everyone must learn that he will lose weight only when his caloric intake is less than that burned up by the body through

activity. One pound of body fat represents about 3,500 calories. To shed a pound, a person must subtract 3,500 calories worth of food. That cannot be done in a hurry; a deficit of 500 calories a day - by eating less - can remove a pound in a week. As a practical matter, moderate reduction of calories combined with a moderate increase of exercise work best for most people who earnestly want to reduce and stay reduced. The secret of wise dieting is small servings, no second helpings, and substantial reductions - but not elimination - of potatoes, sweets, breads, and fats. It means a change in eating habits and takes determination and self-discipline.

If a Little is Good — A Lot May Not Be Better

Vitamins are chemical substances needed in minute quantities for what scientists call the body's enzymes and co-enzyme systems that trigger a myriad of chemical reactions in the various systems, organs, tissues, and cells for a smoothly functioning body.

Discovery of the various vitamins and their uses in the last century has led to the miraculous eradication of scurvy, rickets, beri-beri, and pellagra, once dreaded diseases. However, quantities needed are small and Recommended Dietary Allowances established by the Food and Nutrition Board of the National Research Council for Vitamin A, Vitamin D, Vitamin E, ascorbic acid (Vitamin C), folacin, niacin, riboflavin, thiamin, Vitamin B-6, and Vitamin B-12 cover usual needs and add a reasonable margin of safety.

These vitamins for normally healthy persons can be obtained through food and no self-prescribed vitamin supplements are necessary. Under special health conditions, the physician can prescribe the kind and amount of extra vitamins that are really needed by the individual.

Extra quantities of the fat-soluble vitamins, Vitamin A, Vitamin D and Vitamin E are stored in the body and can cause serious symptoms. The water soluble vitamins - ascorbic acid, folacin, niacin, riboflavin, thiamin, vitamin B-6, and vitamin B-12 are used to the amount needed and the excess excreted in the

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urine. Money spent on massive doses of water soluble vitamins may actually be wasted.

All of the principles of the use of massive doses of Vitamin C to cure colds and Vitamin E to prevent heart disease are not known at the present time. Current emphasis on use of natural vitamins over synthetic vitamins is also unfounded since vitamins are chemicals that have the same effect, no matter what their source.

How Much Do You Know About Nutrition?

Do you believe that

- * drinking gelatin every day keeps fingernails from breaking?
- * beets thicken your blood?
- * raw vegetables and vegetable juice contain life-giving properties while cooked vegetables are "dead"?
- * milk and cheese cause constipation?
- * a diet of grapefruit and eggs is effective as a weight reduction diet?

If you said all statements were false, you were correct. People should be interested in nutrition and learn more about it. It is a science based on biology, biochemistry, and food technology. The body is a fascinating, complex machine and food is the source



GIVING ADVICE - A Division of Health nutritionist talks to a pregnant woman about eating nutritious foods.

Victims of Food Fads

Florida has a particular problem with food fads. Fourteen per cent of the population is over 65 years of age. This group has a myriad of chronic health problems and is highly susceptible to diets purported to cure them of ills. These people are frequently the victims of expensive fad diets and promotions by authors of books and producers of food supplements.

of its fuel and raw material for all that it is, and will become in this and future generations.

Food is a substance that

- * provides the raw material for physical and mental growth and tissue repair and reproduction;

- * supplies chemicals that help the body regulate digestion, metabolism, and other functions of body systems and each individual cell; and

- * provides fuel for body warmth and energy.

When fruit, cereal and milk are eaten by Sam Jones for breakfast, they are on their way to becoming Sam Jones. The over 60 known chemical constituents and perhaps some unknown nutrients of food are rearranged by the body to form the chemical components of the body.

Although many of the basic chemical elements have been known to man for a couple of centuries, nutrition is 20th Century knowledge. We are still learning about nutrition and the relationship and interrelationship of these chemicals on each other. However, nutrition and food technology were practiced by Moses and some Romans in a very practical way.

Because many people have little knowledge about nutrition or biochemistry, they can be easily influenced by whatever they read in the media. Education is the best defense against food faddism. The problem is acute. There are current issues in nutrition which require knowledge and understanding for responsible individuals and public decision-making, the quantity and quality of our food supply, relationships of fats and sugars to increasing obesity and heart disease. The effect of diet on the outcome of pregnancy, the

evaluation of new food products to feed a hungry world, nutritional needs at various ages in life and many more problems face us.

There is a need to have nutrition education in the schools - starting with the preschoolers. Through early understanding of nutrition as a life science, children will be able to combat some of the bizarre diets popular today.

But - where do we begin? There are ways to discriminate between the pseudo-science and responsible nutrition information, sound, scientifically-based nutrition books and articles.

These sign posts can help you select the facts from the fanciful fiction:

* STOP - Be skeptical when

Cure-all qualities are implied for any one food or diet. There is no one perfect or miracle food;

Immediate or dramatic results are promised;

Claims for miraculous dietary cures for serious illness are made. None are now known for the current serious health problems.

BE WATCHFUL when

Relief is promised for a vast variety of different minor ailments;

Any form of a scientific halo or name dropping is used to support the claims;

A specific food or nutrient product is being promoted;

Claims are supported by testimonials - either in print or spoken.

You will know that the way is clear when claims have been checked and supported by statements by recognized nutrition scientists.

One of the results of recent nutrition research is increasing knowledge about nutrients - vitamins, minerals, and proteins - found in foods. Seventy-five years ago, when few processed foods were available and nutrition science in its infancy, emphasis was



SEEKING HELP - A young woman seeks the advice of a county health department's nutritionist on a specific food item. Any Floridian can seek such advice.

placed just on balancing carbohydrates, fats, and proteins in the diet. Recent research has shown the close interrelationships of all nutrients - vitamins, minerals, amino acids, fats, carbohydrates, and water.

Although every one has individual needs, the Recommended Dietary Allowances are used as a basic standard for nutrient needs for healthy adults in the United States and Florida.

Standards can generally be met by including every day food from these basic food groups:

* **MILK AND MILK PRODUCTS** - include fluid, evaporated, skim, dry milk or buttermilk, cheese and ice cream. For weight control and concern for kinds and amounts of fat in the diet, non-fat and low-fat milk and dairy products are suggested.

* **LEAN MEAT, FISH AND POULTRY** - include well-trimmed beef, veal, lamb; variety meats, such as liver, heart and kidney; poultry and eggs, fish and shellfish. As alternates, nuts, cooked dry beans and peas, peanuts and peanut butter can be included occasionally as an excellent source of iron.

* **FRUITS AND VEGETABLES** - include dark green or deep yellow vegetables for Vitamin A (broccoli, carrots, chard, collards, sweet potatoes, apricots, cantaloupe, mango, pumpkin, spinach); sources of Vitamin C include grapefruit and grapefruit juice, oranges and orange juice, green peppers, brussels sprouts, guava, raw strawberries.

* **ENRICHED OR WHOLE GRAIN BREADS AND CEREALS** - include bread; cooked and ready-to-eat cereals, cornmeal, crackers, flour, grits, macaroni and spaghetti, rice; these are worthwhile sources of protein, iron, several of the B-complex vitamins and food energy. (Unenriched white breads, flour, grits do not provide as much iron and B-complex vitamins.)

* other foods, such as fats, oils and sugars, add calories (if needed).

Selection of these foods in daily meals will provide an adequate diet. Nutrients can be eaten in sufficient quantity in foods. There is no need for self-prescribed vitamins - some can be detrimental in excessive amounts.

Seeking Help in Nutrition

Where does one go when he has a question about nutrition?

The Division of Health has nutritionists located in county health departments throughout the state who are available to give reliable information on nutrition. People who question what they have heard about foods or diets, or want to know about the nutrient value of specific foods, can call their county health department and discuss their questions with a nutritionist. Or write the Nutrition Section of the Division of Health for a list of recommended books on nutrition.

Most of the time of the Division of Health's nutritionists is spent on groups considered most vulnerable to malnutrition - women of child-bearing age, preschool and schoolchildren, persons with chronic disease requiring diet therapy, older persons, and low income families.

Nutritionists supply information and materials to health officers, public health nurses, and community health workers - as well as counseling patients and teaching classes in county health department clinics and making some home visits.

Most diet counseling is given to pregnant women who attended clinics, and through school programs to teenage mothers. But more and more attention is directed toward family planning clinics during the periods that women have between pregnancies since their diet and health before they become pregnant influences the health of their babies.

Many requests from adults concern weight problems and dietary control for diabetes. The expansion of the cardiovascular (heart disease) screening programs have increased requests for fat modified diets requiring decreasing amounts of fats from meats and dairy products. People receiving kidney dialysis get nutrition advice on dietary modifications. Stroke patients, persons with arthritis and emphysema also receive dietary counseling.

Not only do the nutritionists of the Division of Health counsel groups and individuals; they work with food services of hospitals, nursing homes, and extended care facilities; child care centers; and institutions of the Department of Health and Rehabilitative Services - youth training schools, Sunland Centers, tuberculosis hospitals, mental hospitals, and correctional institutions.

What You Can Do For Yourself

Everyday you are assailed by the many nutrition and health messages from people and organizations. From billboards, newspapers, television, radio, magazines, you are pressured to buy....., use....., eat..... Many of the advertisements are pushing a particular diet or food.

Listen! Analyze! Question! Some information is factual; much is distorted. You can learn to discriminate by listening closely to the claims. If there is a cure promised, a secret formula involved, or a purchase suggested, be leery. If you question what you hear, ask

your physician, county health department nutritionist, or public health nurse.

Nutrition science cannot promise quick cures to diagnosed chronic or terminal illnesses. It is a cruel hoax to suggest hope in a dietary cure to those who need the best medical care they can obtain. Sound nutrition science can take its place in promoting well developed bodies and minds when pregnant women, their infants and young children eat the proper foods.

Calorie-controlled diets can prevent obesity and maintain desirable body weight. Mounting evidence suggests that a diet

SERVICE - A Division of Health nutritionist visits a children's camp. In addition to reviewing the camp's menu, she assists the children with the preparing of a meal.



lower in total fat and cholesterol, higher in the polyunsaturated vegetable fats, and limited in refined sugars can reduce the risk of cardiovascular diseases.

Dentists tell us that diets low in refined sugars can help prevent dental caries. There are well-recognized diets prescribed by physicians for control and treatment of diabetes, kidney disease, allergies, phenylketonuria, and many other health problems. These diets are based on known principles of body chemistry, physiology, and food composition.

In the world of modern technology every intelligent eater must know enough about the food he eats - its ingredients, its nutrient composition, its chemical additives - to be able to choose discriminately.

Remember - there is no quick way to lose weight, no quick cure of disease attributable to foods, no youth-promoting foods. There is no substitute for the advice of your physician when you have a health problem, or a qualified nutritionist when you have questions about nutrition or diet.

Promote good nutrition in your home and community. When schools introduce required courses in health and nutrition, the health of Floridians will improve greatly. The goal is better nutrition and less food faddism in the Sunshine State for young and old alike.

Credentials of Qualified Nutritionists

The Division of Health and county health departments have only qualified nutritionists on their staffs.

A nutritionist is a college graduate and has completed graduate work in foods and nutrition, or dietetics, with background in biochemistry, physiology - as well as human nutrition and food science.

A nutrition investigator has a medical degree or doctor of philosophy degree in nutrition science or biochemistry and nutrition science.

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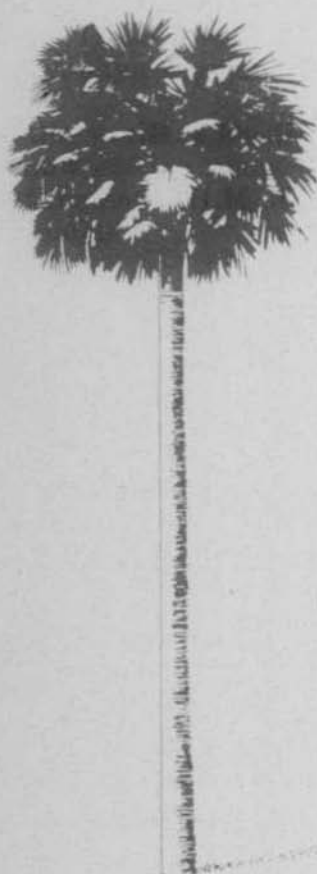
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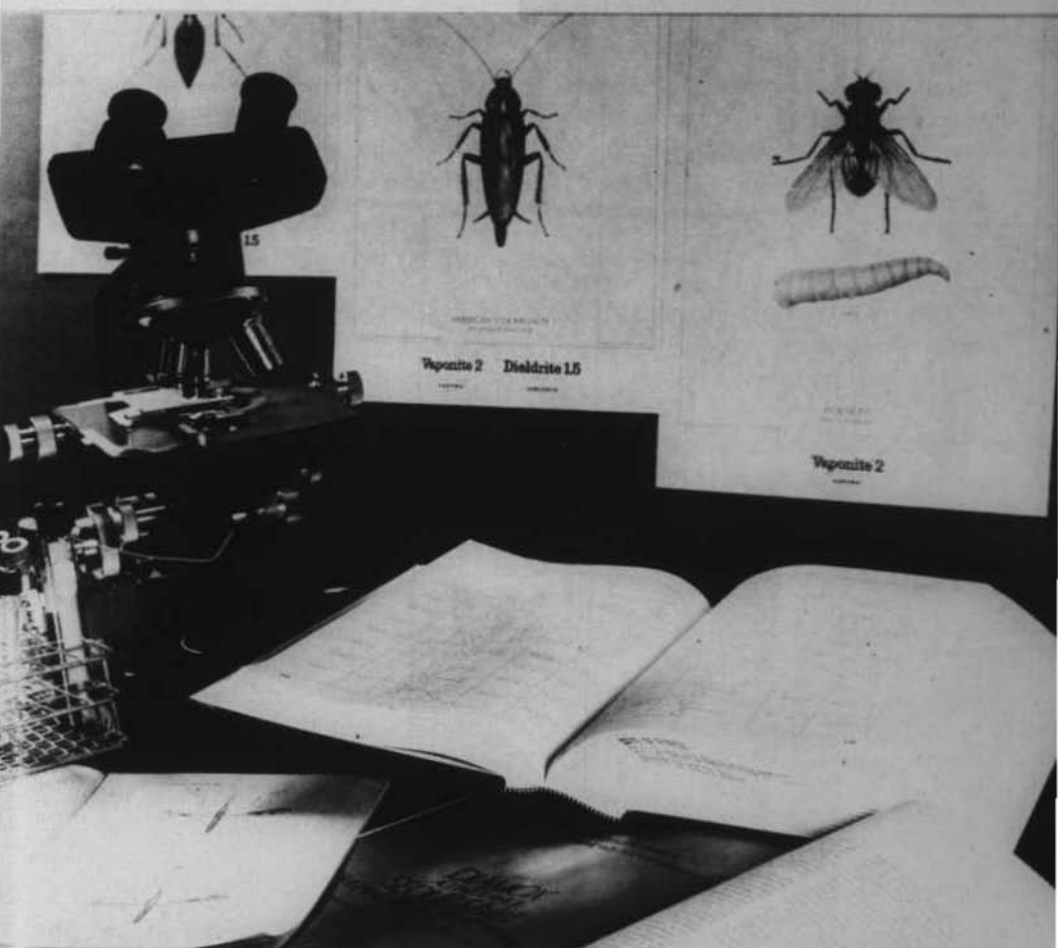
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**Division of Health
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FLORIDA HEALTH NOTES



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A Second Class Publication

NEW HEALTH KNOWLEDGE
—Search, Gain And Use

FLORIDA STATE LIBRARY



HOW KNOWLEDGE BEGAN - Health knowledge was limited during the days of the Middle Ages. Illustrated (above) is an operation on the skull from a 16th Century book on surgery. The 15th Century scenes (left) show an inspection of a cadaver, a visit by a physician, and a surgical operation.

TOOLS OF THE SEARCH (cover photo) - Microscopes, test tubes, books, magazines and many other tools are used in the search for new health knowledge.

NEW HEALTH KNOWLEDGE

— Search, Gain And Use

** A fogging truck from the county health department's mosquito control program moves slowly along the twilight-lit street. Micro-droplets of fog issue from its nozzle and spread through the neighborhood killing adult mosquitoes.*

How do the men from the mosquito control district know what pesticides to use and how much to apply?

** An expectant mother is tested in a county health department clinic for cancer of the cervix during her prenatal examination. The specimen was found to be positive and she was placed under treatment for cervical cancer.*

Why did the county health department physician examine the woman for cancer of the cervix?

** A Florida resident is discovered through a tuberculin testing program operated by the county health department to have an active case of tuberculosis. After a stay of several weeks in a state tuberculosis hospital (operated by the Division of Health), the patient is found to have negative sputum specimens and allowed to return home - even though the physician knows that he still has tuberculosis.*

Why is the patient allowed to return home with tuberculosis?

There are definite answers to these questions.

** Information on fogging procedures and pesticides is available to the mosquito control districts because the Division of Health has a research center that looks into the behavior and the life of mosquitoes and a laboratory that has worked out the pesticide formulas and methods of fogging for mosquito control.*

** Screening programs for cervical cancer in women have proven so profitable in finding new cases that thousands of women submit to Pap smears each year. Women who are thus found and treated can still be saved from cervical cancer during their most productive years.*

* Research has shown that tuberculosis is a slowly developing disease. A person may contract tuberculosis only when he is subject to massive doses of the air-borne germs and even then only under certain circumstances. Therefore, patients with negative sputum specimens can be safely treated at home without endangering their families.

* * * * *

Public health is the science and art of preventing disease, prolonging life, and promoting health and efficiency through organized community efforts. Such practices go back a long ways. Moses, the Hebrew leader, taught the children of Israel certain sound health rules. Many other principles were practiced by the Greeks and Romans; but during the Dark Ages - which ranged from the fall of the Roman Empire in 476 A.D. to the 14th Century - many of the health principles were forgotten.

Modern scientific theories have their roots in the efforts of the ancient leaders and urban rulers of the Middle Ages who sought to protect the health and welfare of their communities. The foundations of modern public health are erected on basic knowledge gained by man between the 15th and 19th Centuries and the teachings of Moses in Leviticus (Chapters 11 through 14). That knowledge is continuing to grow through programs, projects, and studies carried on by today's scientific and medical professions.

The first consistent scientific theory of contagious disease was created in the 15th Century; an accurate knowledge of the anatomy of the human body and the circulation of the blood emerged in the middle of the 16th Century. While public health knowledge was increasing, there were some theories that persisted in error. Even after the State Board of Health was founded in 1889, the theory was still carried by some people that miasmas (vapors

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supposed to arise from decaying organic and animal matter) caused whooping cough and malaria.

To carry out its responsibilities as required by law, the Division of Health of the Department of Health and Rehabilitative Services has the facilities to pursue the search for new health knowledge, make use of this knowledge to better the health of all Floridians and the millions of annual visitors to the state.

This issue of **Florida Health Notes** will tell you about the search, gain, and use of health knowledge and how it is related to the public health practices of the Division of Health.

Practical and Basic Research

The Division of Health carries on both applied and basic research. Formal research is a careful inquiry into a critical matter to learn new facts which may be usefully applied to general use. The inquiry may be a controlled systematic study or a purposeful search for new information. Investigations of this kind are carried on at such Division of Health facilities as

- * the Entomological Research Center at Vero Beach;
- * the Epidemiology Research Center in Tampa;
- * the West Florida Arthropod Research Laboratory; and
- * the Division of Health laboratories.

The search for new health knowledge also includes demonstration projects in which the application of a theory, program, or planned action can be made to individuals or groups for a specific period of time. Conclusions can be drawn and evaluated as to the effectiveness of the demonstrations and their best possible use. Outstanding demonstration projects in the past have been previously reported in our health publications. They include such projects in mental retardation as the Dade County Development Evaluation Clinic, and the Tampa Diagnostic and Evaluation Clinic.

A survey, or fact-finding study, is a method of interviewing individuals or monitoring a situation to discover facts which might be helpful in a particular program. Examples are the study of pet turtles for salmonella infection; and the trapping, tagging, and blood sampling of raccoons in rabies control.

Screening programs are carried out to determine the extent of health problems, find individuals who have a disease or the potential for a disease, and put them under observation or treatment. Such screening programs are continually carried out in diabetes, glaucoma, heart disease, cancer, hypertension, and many other chronic diseases.

In addition, the Division of Health is involved in the operational research for facts and solutions to various health problems and the best methods of providing the answers.

The foremost use of new health knowledge discovered by the Division of Health is its application to help citizens of Florida. Health knowledge is exchanged with other governmental agencies (both state and federal) and private health organizations so that everyone possible can benefit from new health knowledge originating in Florida and we can benefit from the discoveries of others.

The Chronic Diseases

The Chronic Diseases that disable people and take lives may be a long time developing and of a long duration. They are the major killers of people today. New health knowledge is required to control them.

Cervical Cytology - One of the greatest accomplishments in the control of cancer has been the acceptance and use of the Papanicolaou test for cervical cancer. During 1971, Pap tests were performed on 73,572 medically indigent women in county health department and other public health clinics. Of those women tested in clinics, 71 were proven by biopsy to have cervical cancer and started under treatment; in addition, a large number of women screened presented cell abnormalities which, when treated, relieved the condition.

A \$74,000 grant from the Florida Regional Medical Program has allowed continuation of the cervical cytology project at University Hospital, Jacksonville, and additional programs in Tampa and Miami. During the first year of operation, 14,414 women were screened in these three programs, and 26 cases of cervical cancer were discovered. A similar program has been implemented in the Pensacola area.



TONOMETRY SCREENING - The search for people suffering from glaucoma includes the screening of over 358,000 persons in county health department clinics and special programs.

Rheumatic Fever - There is no accurate record as to the extent of rheumatic fever in the population. Hospitals, in response to letters of inquiry from the Division of Health, reported 80 cases as of January 1, 1972. The greatest number of cases were in the five to 24 age group. There is no method of detecting susceptible individuals.

Patients must experience an acute attack before symptoms and signs of the disease occur or antibodies from the infection appear. Once patients have been identified, prophylactic therapy prevents future attacks with a high degree of success. The Division of Health continues to evaluate the problem of rheumatic fever and to assess the effectiveness of therapeutic prophylaxis.

Cardiovascular Screenings - A number of county health departments have begun screening centers for cardiovascular diseases - the major killers in Florida and the United States. More than 31,000 individuals have been screened for abnormalities; 5,000 have been followed for 12 months to see their reaction to treatment; analysis of the first thousand revealed 429 persons were referred to private physicians and county health department clinics for treatment.

Cardiovascular screening was provided for physicians at two recent annual meetings of the Florida Medical Association. Of 73 physicians screened, 8.6 per cent had high blood sugars. Twenty-seven physicians had cholesterol values above normal, and one had an extremely high blood cholesterol.

The fruits of the tree of knowledge are various; he must be strong indeed who can digest them all.

Mary Coleridge, **Gathering Leaves**

Diabetes - Due to the prevalence of high blood pressure among persons previously undiagnosed with diabetes, the screening programs of the Division of Health and county health departments have been modified to include, in most instances, both diabetes and hypertension screening tests. Referrals are made to private physicians for diagnosis and treatment.

New curricula and visual aids are being developed for diabetes patients education classes. The aids will be field-tested and then produced in looseleaf notebook size and as "flip charts" for use in teaching small and large groups. Emphasis will be placed on the physiology of diabetes, diet, medication, urine testing, hygiene, and other skills that will help a diabetic to adjust to a normal life.

Smoking and Health - Two studies were conducted to determine the attitudes and degree of involvement of Florida health professionals toward tobacco smoking and health.

In a study of smoking and habits of Florida pharmacists, 286, or 34 per cent, of the 845 respondents had never smoked; 340, or 40 per cent, quit smoking; and 219, or 26 per cent, still smoked. At the time of the survey, 73 per cent of the respondents did not smoke.

In a survey of Florida physicians, 66 per cent, or 5,736 of the total number of licensed doctors, returned a completed questionnaire which probed their personal medical history - in addition to their current smoking habits. This study was compared to one carried out in 1964. Fewer physicians started smoking; 25 per cent reported they never started in the 1964 survey, as compared with 37 per cent in 1972. More continued to quit each year. Eighty-two per cent do not now smoke cigarettes.

Both the pharmacists and physicians of Florida continue their responsibilities for public education about tobacco and health by their personal examples.

Glaucoma Screening - Public health nurses, trained by ophthalmologists in the techniques of tonometry, have screened over 358,000 persons for glaucoma from April 1962 through December 1971 in several county health department clinics and screening programs. Over 8,450 persons, or 2.4 per cent, were referred to physicians, and 3,726 new cases of glaucoma were diagnosed. A total of 1,106 persons with borderline glaucoma was placed under the observation of ophthalmologists.

Hypertension and Kidney Disease - Random blood pressure determinations among some 14,800 schoolchildren revealed 1,292 with a pressure above the normal for their age; 233 had positive results of blood or protein in their urine - indicating kidney disease. Among those referred to private physicians, 20 were re-evaluated after the blood pressure had returned to normal. At the end of six months, the 20 children's urine tests were negative.

The value of early diagnosis and continued treatment of mild hypertension has been demonstrated dramatically during a research project which has been carried out for the past five years. Statistics indicated therapy can reduce mild hypertension to a satisfactory level in as many as 80 per cent of the treated individuals. The higher the blood pressure, the less likely the patient will respond to treatment. The Division of Health has stressed in its educational program the importance of early diagnosis and continued treatment to avoid the complications of chronic high blood pressure, such as stroke, heart attacks, and kidney disease.

Investigation into an Epidemic

The outbreak of an epidemic calls for action by the Division of Health and county health departments. One such epidemic of mild febrile illness appeared in Key West during November, 1970, in association with a rash unique for its peculiar distribution on face and extremities, and tendency to reappear for some time during periods of stress.

By the second week of 1971 it had become an epidemic in several elementary schools and appeared in increasing frequency in older students and a few adults.

The pediatric consultant, sent by the Division of Health to study the outbreak, found it clinically consistent with "Fifth" disease, or erythema infectiosum. Efforts to isolate the virus from unfrozen throat washings and fecal specimens inoculated into a variety of cell cultures by the laboratory were unsuccessful. Serological studies ruled out rubeola (red measles), rubella (German measles), and adenovirus.

The outbreak did not spread significantly from Key West and disappeared by the end of January 1971.

Control of Tuberculosis

During the past two to three years there has been a change in the concept of treatment for tuberculosis patients. For a number of years, patients were confined to tuberculosis hospitals for long periods of time. Since 1948 new drugs emerged from the laboratories that were effective in tuberculosis control. Now drugs and combinations of drugs make a person who was infectious non-infectious within a short period of time. A patient who is "active" but not infectious may be allowed to return home from the tuberculosis hospital.

The early discharge of patients from in-patient care to out-patient is due to the effectiveness of these anti-tuberculosis drugs in converting infectious individuals to non-infectious. This shift in the concept of tuberculosis patient care from hospital to the home places the major burden of treatment in the health department clinic-as well as the private physician's office.

At the present time, Florida's two tuberculosis hospitals have an average census of 400 patients. The state has an average of 10,000 persons each year taking drugs at home for tuberculosis control; 3,800 patients live at home receiving drugs; an additional 7,200 persons, who are at risk (in danger of coming down with the disease due to exposure over a long period of time) are also receiving therapy.

Knowledge advances by steps, and not by leaps.
Macaulay, **Essay: History**

Our knowledge is the amassed thought and experience of innumerable minds.

Emerson, *Letters and Social Aims*

Child-Centered Program - The Child Centered Program to Prevent Tuberculosis has completed its sixth year as part of the Division of Health's Tuberculosis Control Program.

During the 1971-72 school year, the staff of the Bureau of Tuberculosis Control Section assisted 35 county health departments in conducting tuberculin testing programs in selected schools - some in new counties and others in areas of high incidence. Of the 60,421 tests administered, 1,029 children showed positive reaction, a reactor rate of 1.7 per cent. In 1968, the reactor rate for those tested in Florida was 4.4 per cent.

As a result of the program, 510 infected school children and their associates receive prophylactic treatment.

Medical Help for the Poor

A feasibility study is under way by the Division of Health's Migrant Health Program to find ways of providing medical care for migrant farm laborers, seasonal farm workers, and the rural poor.

At the present time, migrants receive in-patient hospital care on a crisis basis. When a patient leaves the hospital at the end of his stay, he frequently is unable to make any payments and the hospital costs are passed on to other patients of the institutions by increased charges. There is relatively little medical care provided for the non-migrant rural poor.

A pilot project is under study for Seminole, Hillsborough, Sarasota, Lee, Collier, Palm Beach, and Broward Counties in which the low socioeconomic groups would make small monthly payments toward providing themselves with medical care. Under the plan, they would receive out-patient and in-patient hospital care, emergency medical services, health maintenance, health screening, and home nursing care.

Called a "third party reimbursement health care system," the medical care might be provided by a group of local physicians, the county health department, or an existing health care group. The third party could be insured by one of a number of companies which already provide health insurance, the federally-subsidized Migrant Health Program, or directly by the Federal Government.

In addition to the need for developing better medical care for the poor in Florida, there exists a need to develop a fee collection system, a list of benefits, and a list of providers of services for migrants as they move northward during the season. At the present time, there is no background information on this type of project.

Field Trials of a New Vaccine

There is always a search for ways to improve the vaccines that prevent communicable diseases. Two Florida counties — Hillsborough and Pinellas — have been participating in a vaccine field trial to test a triple vaccine that combines rubella, measles, and mumps vaccines.



NEW VACCINE - Hillsborough and Pinellas County Health Departments participated in field trials to test a triple vaccine that combines rubella, measles, and mumps vaccines.

The National Communicable Disease Center of the U.S. Public Health Service, with the cooperation of the Division of Health, selected these counties in which to test the safety and efficiency of the new vaccine being proposed for licensure by a pharmaceutical company. One such vaccine produced by another company is already licensed and in use.

Phase I of the field trials began last June and lasted two weeks. Children were selected for the study who had neither been previously immunized against, nor had acquired, the three diseases. A specimen of blood was drawn from each child before the vaccine was administered. Another specimen was taken two weeks later. This was to compare the antibody response of the vaccine.

Phase II was carried out in early August in which a second blood test was drawn to determine the extent of the antibody development. Adverse reactions to the vaccine were also noted by the physicians and public health nurses.

The Search for Arboviruses

The Epidemiology Research Center is a unit of the Division of Health devoted to applied and basic research in general microbiology with a major emphasis in the virus studies.

New health knowledge is sought about arboviruses (those viruses transmitted by mosquitoes and other biting insects) through surveillance of small animals, birds, and man - particularly in the five Tampa Bay area counties. During 1971, physicians, hospitals, and county health departments submitted 1,576 serum specimens from 928 patients for diagnostic tests.

If evidence of mosquito-borne illness had been identified in any patient, or if virus activity had been evidenced in any of the small mammals and birds tested, the various bureaus and sections of the Division of Health would have been alerted and appropriate measures instituted to protect the general public.

Knowledge is a treasure, but practice is the key to it.
Thomas Fuller, *Gnomologia*



SEARCH FOR ARBOVIRUSES - A technician at the Epidemiology Research Center injects test material into suckling mice - just one step in the detection of the viruses transmitted by mosquitoes and other biting insects.

A strain of Venezuelan equine encephalitis virus has been active in South Florida for a number of years. This strain does not kill horses and rarely produces illness in man - remaining of little public health importance. However, another strain of the Venezuelan virus, which produces severe and usually fatal diseases in horses, and may cause encephalitis in man, began moving through Mexico and entered Texas in 1971. This occurred in spite of a buffer zone of immunized horses. There is no assurance that this virus, which moves in nature through low coastal areas, will not spread insidiously around the Gulf Coast and become a real threat to public health in Florida.

The Center, through funds provided by the U.S. Public Health Service, has been carrying out surveillance along the Gulf Coast from Mississippi to North Florida. Specimens have yielded evidence of Western equine encephalitis, St. Louis encephalitis, and possible infection with the Venezuelan virus in raccoons — one trapped in Mississippi, and one in North Florida.

If it is established that Venezuelan equine encephalitis virus is active in the Gulf Coast states, the surveillance will be continued until the geographical extent of the infiltration is ascertained.

The city of St. Petersburg has embarked on a pilot project of using secondary effluent from waste water treatment plants for spray irrigation of public lands. The Center is studying the fate

of viruses which enter the system from human excrement. From October 1971 to January 1972, 52 virus isolations were made from completely treated effluent - including pre- and post-chlorination treatment.

This is a most difficult project because techniques are not available at the present time to consistently concentrate small amounts of viruses from large volumes of water. Positive findings are informative, but negative findings merely indicate that, if present, the viruses are at such low levels that present techniques cannot demonstrate their presence.

The principle of using secondary sewage effluent for spray irrigation and ultimate recharge of the underground aquifer instead of enriching and polluting natural surface waters with it is excellent. However, before the practice can become widespread, it must be ascertained that this method of disposal is not injurious to the public health.

Soil samples and water drawn from wells located on the spray irrigation sites must be tested for viruses to determine whether these viruses can survive percolation through the soil. If they do survive, more extensive waste water treatment must be employed before effluent can be used to irrigate lands. This will avoid any contamination of the Florida aquifers - which are the major source of potable water in Florida.

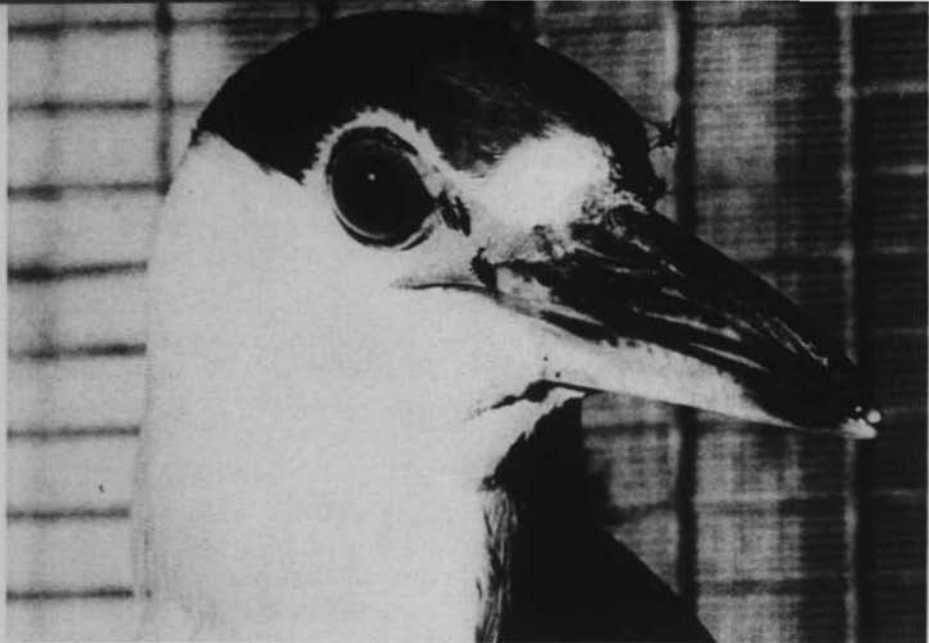
Control of Mosquitoes and The Biting Insects

The feeding and breeding habits of disease-carrying mosquitoes are important to public health measures used to control these insects.

Studies carried out at the Division of Health's Entomological Research Center investigate the personal lives of various mosquitoes, sandflies, and other biting pests. Some very curious facts have been turned up by the research.

A wise man is strong; yea, a man of knowledge increaseth in truth.

The Bible, Proverbs 24:5



A three-year study of mosquito selection of hosts on which to feed has revealed that 16 species of **Aedes**, **Anopheles**, **Coquil-letidia**, **Mansonia**, and **Psorophora** feed almost exclusively on mammals. Mosquitoes that frequent wooded areas feed more often on rabbits and armadillos (border and wood-frequenting mammals) and less on cattle - the favorite host of those species



MOSQUITO FEEDING -
A heron sits still while mosquitoes feed on its head (above) and on its feet and legs (left). Some birds respond to the mosquitoes' attack by foot-slapping and foot-pecking.

which normally fly far and into the open in search of a blood meal. One species, **Culiseta melanura**, feeds predominately on small perching birds. This would suit the vector that spreads Eastern and Western equine encephalitis.

After a mosquito has had its blood meal, a membrane forms around the blood immediately after the feeding. This membrane persists long after the blood has been digested by the mosquito. If a mosquito has had more than one blood meal, the membranes can be detected by the entomologist. A double blood meal is important to epidemiological investigations.

Studies of bird reaction to an attack by mosquitoes have revealed some interesting facts. These reactions are important in determining from what birds mosquitoes obtain their blood meals. Some wading birds, like little blue herons and white ibises, respond to an attack by mosquitoes by foot-slapping and foot-pecking, successfully warding off the attacks. Others like the green heron and black-crowned night heron, which were readily fed on by mosquitoes, defend their heads and bodies rather than their feet where most mosquitoes tend to feed.

The rate the mosquitoes engorge themselves on nestling herons decreases as the birds grow from two to eight weeks - beyond which they resemble and act as adults. Another entomological factor is important: As the density of mosquitoes increases, there is less success in the mosquitoes feeding. In other words, the more mosquitoes attack a bird, the more the bird will drive off the insects.

Culex nigripalpus, which was found in 1962 to be the vector of St. Louis encephalitis in Florida, was discovered through research to feed more in the woods in the cooler months and in the open in summer. Also, after mid-October this mosquito was less attracted to a mammal-baited trap than to a bird-baited one. The Division of Health hopes eventually to relate such findings to the remarkable seasonal shift of **nigripalpus** from bird to mammal hosts and back again. This phenomenon is certainly a factor in the mosquito's virus-transmitting role.

Nectaries elsewhere than on flowers are produced by some 35 plant species in Florida. Laboratory survival studies have demon-

strated the importance of these extrafloral nectaries as a carbohydrate food for mosquitoes. Mosquitoes which lived not more than six days in cages with succulent vegetation as potential food, lived up to 54 days, just as they would on flower nectar - when caged with vegetation that has extrafloral nectaries.

New Knowledge About Dog Flies

Dog flies, a pest in the Panhandle area of Florida, showed an increase during 1971 over the previous year, according to trap collections made by the West Florida Arthropod Research Laboratory. Adult flies first appeared in small numbers at scattered points on the shores of the bays and Gulf Coast beaches as early as July 22, a record for early infestations. Owing to the mild winter, the dog fly season extended through November, 1971, and the pests were present on dogs in Panama City on Christmas Day. The season usually ends about November 1.

A research highlight of the year was the trapping of marked flies 70 miles from the site where they were released. This demonstrated that the Gulf resort beaches were well within range of the thousands of breeding sites in the heavily-farmed areas of West Florida and Southern Alabama. The significance of this new information is readily apparent when it is realized that organized control programs for dog flies exist only at breeding sites in the Gulf Coast counties of Florida. Therefore, northerly winds in late summer and fall will continue to bring some dog flies to the Gulf Coast from the remote breeding sites, even if local production sites are well controlled.

On September 24, 1971, 100,000 five-to-six day old flies, marked with a dye, were released at a point on U. S. Highway 90 about 45 miles north of Panama City beaches. Six similar releases were made over a period of six weeks. A total of 38,828 flies were trapped in box traps and on sticky panels placed along the beaches from Okaloosa County to Gulf County. Three of the marked flies were trapped near Destin, Florida, 70 straight-line miles from the release point. Marked flies also were trapped at other beach sites at distances from 45 to 70 miles from the spot where they were released.

In order to prevent the development of dog flies, research has been carried out by the laboratory in methods of controlling the pupation of the insects. The adult dog flies lay their eggs on piles of aquatic grasses on the shores of lakes and bays. The eggs hatch and the larvae, within six days to four or five weeks (depending on the temperatures), burrow into the soil beneath the grasses to further develop.

One method of controlling the development of the flies is to rake the grass back into the water to destroy the larvae before they burrow into the soil. Studies have shown that the grass must be raked back at intervals of six days during the summer months, and at longer periods in the cooler months. Another method of control is the spraying of the grasses with pesticides from boats. The laboratory also has conducted tests in the applying of pesticides by truck and airplane for the control of adult flies.

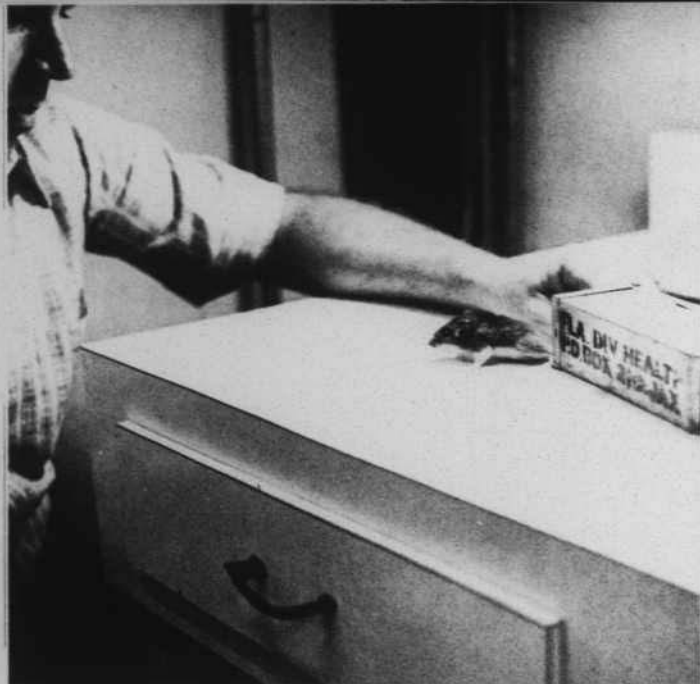
Several trips were made to farming areas north of the Florida coastal counties in the continuing study of breeding sites of dog flies. Several dairies were visited and large numbers of dog flies were found breeding in silage left by animals in feeding troughs and spilled on the ground under the troughs. Both upright and trench silos are used in Northwest Florida to store silage and these are not fly-proof. Based on latest dispersal studies, these breeding sites are well within flight range of the Gulf beaches.

Eye gnats have become serious pests in rural areas of Northwest Florida, particularly where large tracts of wooded land have been cleared in recent years and placed under cultivation. Research on the biology and control of these pests was initiated last year.

Diseases Among Animals

The Division of Health and county health departments also conducted studies into animal diseases that are communicable to man.

A study to determine the rate of salmonella infection in pet turtles offered for sale by importers showed that all of the specimens collected and examined were infected. The test results led the Dade County Department of Public Health to prepare a proposed ordinance which would restrict the sale of turtles only to



ENCEPHALITIS CARRIER - This cotton mouse, trapped in the Everglades, has antibody titers in its blood which indicates that it has had Venezuelan equine encephalitis.

those which were salmonella free. The surveillance and study of turtles offered for sale continues with a view of obtaining a similar state-wide restriction.

A continuing study in two Everglades hammocks in Monroe County showed that small rodents are involved in the circulation of Venezuelan equine encephalitis. Up to 19 per cent of the cotton mice and 80 per cent of the common rats had antibody titers to Venezuelan equine encephalitis - indicating that the virus was active in the area between July and October 1971.

Studies for raccoon rabies were conducted on Marco Island and Longboat Key and at Tyndall Air Force Base near Panama City. Raccoons were trapped, tagged, and blood, tissue and saliva specimens collected. The outbreak of rabies in raccoons at Tyndall Air Force Base was brought under control before it could spill over into areas adjacent to the base. Information was obtained that showed the epizootic (animal disease epidemic) on Longboat Key had completely subsided. The findings on Marco Island were helpful for future studies concerning possible nonfatal infections.

Studies for Occupational Health

One area in which the Division of Health has a deep interest is the condition under which people work. Levels of illumination, atmospheric concentrations, toxic contaminants, noise levels,

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and many other aspects of the working environment are tested by the Division of Health's Occupational Health Program.

The Division of Health was alerted recently by the U. S. Public Health Services of possible dangers to workers in furniture refinishing plants from paint stripping compounds containing benzene. An individual should not be exposed to an atmosphere with a benzene content above 25 parts per million parts of air by volume for any lengthy period without the proper respiratory protection. The major problem is the inhalation of the benzene vapors, but these solvent vapors and the liquid can also be absorbed through the skin.

The Division of Health was alerted because the atmosphere content of a furniture stripping operation in Wisconsin was found to have concentrations of benzene above 1,000 parts per million.

The Occupational Health Laboratory, after studying solvents sent in by county health departments found that benzene is not as commonly used in Florida as originally suspected by the U. S. Public Health Service. The majority of people using these solvents were aware of the toxicity and were taking necessary precautions to use the solvents with adequate ventilation and wearing personal protection equipment.

In another study, the Division of Health laboratory measured the lead content of paint on lead pencils sent in by several county health departments. In New York State, such paints were found to have five to 14 per cent lead content. The Occupational Health Laboratory scraped paint off the pencils and tested it for several of the heavy metals, including lead, cadmium, and chromium. No concentrations of heavy metals were detected in the paints that were of a significant health hazard to pencil-chewing individuals.

The laboratory has also studied the lead contents of paints from houses. It found that exterior paints frequently had a higher lead content than interior paints. If a child were to chew these paints, it could result in lead poisoning. Although the current trend is toward latex paints, some of the currently - marketed paint primers and the older oil-based paints still have high concentrations of lead. Brushing the paint on the walls is less dangerous, but there is more danger from inhaling the lead particles

while spraying, wire-brushing, or sanding with power tools, or welding — which vaporizes both the metals and the paints.

The Persistence of Pesticides

The Division of Health's Community Pesticides Study is studying the effects of pesticides on human health.

A study to measure the incidental pesticide exposure in the population at large and to determine the several environmental contribution of pesticides is under way. The work is carried out in three areas:

- * the relationship of socioeconomic class to human pesticide pollution;
- * the role of house dust; and
- * the prevalence of pesticide pollution in migrant field workers and the effects on their biochemical and nutritional profiles.

The frequency distribution of DDT and its metabolite (DDE) and dieldrin appears to have a strong association with social class and emphasizes the contribution of poverty and over-crowding to South Florida's problems. By stratifying the population, the prevalence of the insecticides in the urban poor has been measured. Contrary to earlier beliefs, incidental exposure to DDT is not homogenous throughout the population. Important differences due to person, place, and time are being recognized. The essential distribution differences are that nonwhites have higher residues than do whites.

The overall geographic and demographic distributions of DDT residue in the population of Dade County support the concept that there was an important non-food source of incidental exposure in the warm climate. House dust has proven to be a significant vehicle of pesticide poisoning.

By working with migrants, information of pesticide residues in the rural poor have been acquired. Blood serum from the rural poor was found to have DDT residues and its metabolites twice as high as other social classes. Migrant children had residues of similar nature.

A study of 1,500 residents of a Caribbean island and their air, water, food, soil, and dust revealed a blood content almost

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twice as high as the majority of residents on Florida's mainland and close to the average level of the Florida migrant worker.

A two-year study is seeking to measure and compare pesticide residues with certain cancer sites, including the lung and breast, gastro-intestinal tract, and metastatic cancer. It is too early to draw any conclusions in this study.

Pesticides in the environment have been exposed through air monitoring and community studies. In the former, the project has been able to measure airborne spread of DDT on an island 60 miles away in the Gulf and on the mainland.

The laboratories of the Division of Health assisted the Community Pesticide Study by performing 180,622 examinations on 4,301 specimens.

Gonorrhea Cultures

New health knowledge includes the search for new methods of performing tests in the laboratory. It has become well known that the culture technique is far superior to the microscopic smear for detecting gonococcal infections in women.

PESTICIDE STUDY - A blood specimen is drawn from a migrant field worker during a study of the persistence of DDT in the community.



From past experience, the Division of Health found that only two per cent of the smears from female patients were positive; now gonococci are being recovered from 10 per cent of the cultures from asymptomatic women (those who do not show symptoms of the disease), who are seen in maternal, family planning, and venereal disease clinics.

On the other hand, the 62 per cent positive rate indicates that the smear technique is quite effective in confirming gonorrhea infections in men who usually will show symptoms when seeking treatment.

Division of Health laboratories in 1971 isolated **N. gonorrhea** from 13.3 per cent of the 53,247 specimens cultured, and 14.2 per cent from the 104,164 gonorrhea smears.

Migrant Nutrition Survey

The search for new knowledge also set into motion a nutrition status survey of some 2,200 seasonal farm workers and families in Palm Beach and Lee Counties. The search was under the sponsorship of the Division of Health and U. S. Public Health Service.

Families and individuals were interviewed for food habits and examined for physical conditions. The Jacksonville and Miami Laboratories actively participated by performing 43,090 clinical chemistry and vitamin analyses on 15,170 blood and urine samples. The Jacksonville laboratory performed hemoglobin, hematocrit, total protein, albumin, Vitamin A and C, and carotene determinations. The Miami laboratory carried out urinary creatinine and riboflavin assays. Samples were also sent to a laboratory in Denver for serum folate and iron binding capacity, and whole blood studies; and a Boston laboratory performed urinary iodine tests.

Upgrading Laboratories

In the early days of Florida's public health, the main purpose of the Division of Health laboratories was to provide services to the people that they could not obtain elsewhere. An outstanding development of these services was basic research in bacteriology which had a direct relationship to the infectious diseases - a major public health problem of the time.

Knowledge is indeed that which next to virtue, truly and essentially raises one man above another.

Addison, *The Guardian*, No. 111

Today, new technologies and increased demands for laboratory procedures, which public funds cannot support, have initiated a trend by public health laboratories to move away from exclusively performing direct diagnostic services to the community and more toward roles in research, training, and consultation.

The Clinical Laboratory Licensure Law, passed by the 1967 Legislature, gave impetus to the Division of Health's responsibility of upgrading private and hospital laboratories and assisting with the training of laboratory personnel.

Detecting Intoxicated Drivers

The search for new health knowledge includes the work of the Division of Health under the Implied Consent Law - also passed by the 1967 Legislature. The act is aimed at detecting intoxicated automobile drivers who are involved in traffic violations. The Division of Health, in cooperation with the Department of Education, gives proficiency tests to technicians and police officers who have completed a 40-hour course in "chemical tests for intoxication." Annual field visits are made to the 2,800 individuals to determine their proficiency. In addition, the Division of Health quarterly checks and certifies the 360 instruments on which the tests are performed.

There Are Many Other Studies

This issue of **Florida Health Notes** is not large enough to report all of the new health knowledge gained in recent years; neither is it comprehensive enough to include all of the current projects and programs underway at the present time to search out new ways of treating or diagnosing disease.

Studies have shown that contrary to reports published during the summer of 1971, the mercury level in public water supplies was of no public health significance.

Laboratory investigations of cadmium concentrations in one city water supply (reported by an out-of-state laboratory) failed to confirm that there were amounts dangerous to public health.

A number of county health departments are involved in the search, gain, and use of new health knowledge. These include:

- * a mobile air sampling vehicle in Manatee County to monitor ambient air for carbon monoxide, sulfur dioxide, wind direction, particulates, and velocity;

- * a screening program for sickle cell anemia in Hillsborough County which showed 14 per cent of those tested as positive for traits;

- * an investigation in Pasco County that showed an amoeba, *Naegleria gruberi*, -- reported by a volunteer investigator -- was not the deadly form and not truly a "gruberi";

- * an investigation in Alachua County revealed an increase in venereal disease, and resulted in a research study at the University of Florida into the use of an experimental drug for the treatment of gonorrhea;

- * an investigation of hepatitis in Palm Beach County among teenagers, directly related to the drug subculture, showed some cases were connected to the use of the same drug paraphernalia by the young people.

The Search Continues

The search for health knowledge will continue until the end of time. Some people have good health. They know how to take care of themselves with proper food, plenty of rest, work and recreation, and a well-disciplined mind. Other people are reaping the fruits of poorly disciplined lives. They are continually searching for their "lost youth" or "a better day."

The Division of Health has been carrying on its inquiry into community health problems since the day it was founded. At first communicable diseases received the highest priority; today the research has expanded to the chronic diseases and the environment - which has a direct relationship to man's health.

This is the end of our story on New Health Knowledge - The Search, Gain, and Use; but it is not the end of the Division of Health's work to make life better for you and your family.

THE SEARCH CONTINUES!

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